Project Name & Task:	Clean Harbors-Wichita Phase IV RFI	_								
ample Delivery Group: FA 9241										
sis Method: 8260B, 8015(DRO), 8270D, METALS										
Sample Locations in Batch:		-							_	
Sumpre Because in Succin	SOIL: NONE			7.00	*******					
	SOIL: NONE									
				-						
Split Samples NONE										
Quality Control Samples As	ssociated With Batch Field:	TR	IP BI	LAN	ΝK					
	Lab:	M	ETHO)D	BLAN	JKS LAB	SPIKES MS	S/MSD, SURROGA	ΔTE	<u> </u>
Reviewed by & Date:	Lisa Hennessy 11/8/2013		BIIIC	,,,	DD, ti	iiko, Erib	or medo, mi	SHVISD, SCIUCOSI	1112	,
Quality Control	Requirements						eck			Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	┼		7.1	(* See QC	Comments)		+	(see comments)
Data 1 kg Complete (D1)	An required deriverables in pkg.	l –	7	_	_					
	(Case Narrative/Conformance Summary,	\\\\	OK	L	_No*	Not pr	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported	~	٠.,		No*			Comment#:		
Holding Times (HT)	Water	1	=	Ļ	No*	☐ N/A		Comment#:		Flags Applied
Containers and Preservation	Soil Containers and preservation compliant	1	OK	┾	No*	✓ N/A		Camana ant#1		Flags Applied
Blanks (MB,TB,EB, FB/AB)		14	OK		No*	:		Comment#:	┿	Flags Applied
	Method Blank		No	7	Yes*	N/A		Comment#: 1		
	Trip Blank	4	No		Yes*			Comment#:		
	Equipment Blank	L	No	L	Yes*	· ✓ N/A		Comment#:	\perp	
Blank Spike S)	LCS Data Provided Acceptance criteria met	1		┾	No*			Commont#		☐ Flags Applied
MS/MSD	Matrix Spikes Provided	7	1	┢	No*	None*	:	Comment#:	+	
	Acceptance Limits:		ОК	7	=			Comment#: 2	\dashv L	Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	4]ок] No*	☐ Not pr	ovided		Тг	75
	Recovery Limits:	4	ОК		No*			Comment#:		Flags Applied
Sample Evaluation	All hits within cal. Range		ОК	Ļ	No*			Comment#:	_ г	Flags Applied
Ti II D. II . (TD)	Sample Dilutions		1	╞	Yes*			Comment#:	+	
Field Duplicate (FD)	Precision of native vs field duplicate(s)	<u> </u>	JOK	L	_ No*	☑ N/A	See	Analysis Below	<u> </u>	Flags Applied
Sample Receipt Summary	NOTHING NOTED									
Sample Receipt Summary	NOTHING NOTED									
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED	SUM	MA	RIES	OF HOLI	TIMES O	CISSUES		
AND CONFORMANCE.						01 11021	711.120, Q	, ,		
AND CONTORMANCE.										
Review of field notes (note a	ny deviations from work plan or other anoma	ılies	that	ma	y bias	s data): No	OTHING NO	OTED		
Field Duplicate Analyis:	NOT APPLICABLE									
	1101 IN LICIDLE									

OC Item			Comments
1	SVOC Method Blank - detection of	diethyl phthalate at 2.	2 μgl - samples associated with this batch are ND so
	no additional Qualification requi		
9			
2	MS/MSD failures were present. Al		
	The laboratory case narrative provide		
	Analyses for LCS met criteria for fa	iled compounds, exce	pt where noted and addressed in the LCS discussion;
	therefore, acceptable precision and a	accuracy are demonstr	ated by LCS QC.
	-		
			
The results presente	essment for Group: ed in this data package have been valida Review (OSWER 9240.1-05A-P) date		th validation criteria presented in the EPA Functional Guidelines for Organic
Data Qualification		0 1:5	Passar for Ovelification
Sample II None	Analytes	Qualifier -	Reason for Qualification No additional action required
None		- -	ivo additional action required

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI	_								
Semple Delivery Group:	FA8716	-								
ysis Method: 8260B		-	Mat	rix:	[~	Water	✓ Soil	Other		
Sample Locations in Batch:	AQUEOUS: A10-4, T6-1, T7-2, T5-3, A	- A8-1	l, SK-	12S-	-hydr	a-2, SK-1S	-hydra-2, SK	-12S-hydra-6, S	K-12	2S-hvdra-4
SK-1S-hydra-4, SK-1	S-hydra-6, SK-1S-hydra-8, SK-1S-hydra-10, SK-									
	-4-2, A10-4-10, A8-1-15, A8-1-0.5, A8-1-WT, A									
Split Samples NONE		.0 1	0.5, 1	10 1	3, 17	7-2-0, 710-1	1-10, 710-4-0	5.5, A10-4-IN1,	AIU	-4-13
Spit Samples NONE	,									
	*									
Quality Control Samples As	ssociated With Batch Field:		RIP BL							
	Lab:	ME	ETHO	D B	LAN	IKS, LAB	SPIKES, MS	/MSD, SURRC)GA	TES
Reviewed by & Date:	Kate Fuller 11-1-13									
Quality Control	Requirements	$\overline{}$				Ch	eck			Eleas Applied
Quanty control	requirements					(* See QC				Flags Applied (see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.									(see comments)
		~	ок	Г	No*	☐ Not pr	ovided	Comment#:		
	(Case Narrative/Conformance Summary,				,		oviaca	Comment.		
	Results, COC, QC Summaries) All samples on COC reported	\vdash	٦	_	1					
Holding Times (HT)	Water	1	OK OK	+	No*	N/A		Comment#:	1	Floor Application
Troiting Times (TT)	Soil	1		H	No*	□ N/A		Comment#:		Flags Applied Flags Applied
Containers and Preservation	Containers and perservation compliant	1			No*			Comment#:		Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)									- I lags / ipplica
	Method Blank	4	No		Yes*	□ N/A		Comment#:		
	Trip Blank	1			Yes*			Comment#:		
(Blank Spike S)	Equipment Blank LCS Data Provided	 	No	\perp	Yes*	✓ N/A	r.	Comment#:		
(Diank Spike S)	Acceptance criteria met	4	OK OK	1	No*				_	✓ Flags Applied
MS/MSD	Matrix Spikes Provided	┢	OK	Ť	No*	None*		Comment#:	2	
	Acceptance Limits:	I	ОК	П	No*	None		Comment#:	3	Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	V	ОК		No*	☐ Not pr	ovided			
	Recovery Limits:		ОК	V	No*		oridod	Comment#:	4	Flags Applied
Sample Evaluation	All hits within cal. Range		OK	4	No*			Comment#:	5	D Flance Assulted
	Sample Dilutions	<u> </u>	No		Yes*			Comment#:		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK	Ш	No*	✓ N/A	See .	Analysis Below		Flags Applied
Sample Receipt Summary	NO ISSUES NOTED									E .
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LEC	SUN	1M	ARIE	S OF HOI	LD TIMES, (QC ISSUES,		
AND CONFORMANCE.										
Review of field notes (note ar	ny deviations from work plan or other anomal	ies t	hat m	av l	nias d	ata).				
NONE NOTED	, and an order unomar	105 0		ay k	, ids d	ata).				
THE THE TEE										
Field Duplicate Analyis:	NOT ADDITE ADITE									
Tota Duplicate Analysis:	NOT APPLICABLE									

QC Item	<u>Comments</u>
1	Samples were collected in the field for future analysis if required and held at the lab.
	Analysis of any held samples are reported separately.
2	LCS recoveries were above the limits for dichlorodifluoromethane, Acetone, and 2-Hexanone
	Associated samples were ND. No additional action required.
	LCS recoveries were below the acceptance limits for 2-chloroethyl vinyl ether
	Data for this compound is qualified with an "R". See Data Qualification table below.
3	MS/MSD failures were present. All were evaluated.
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
4	4-Bromoflurobenzene exceeds control limits for A8-1-0.5. Acrolein was reported as ND, therefore, no further action
15 To	is required.
5	TCE was above calibration range and is lab flagged with an "E" for SK-1S-Hydra-10. No further action is required.
-	
	sessment for Group:
The results prese	ented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines
the precision and	Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting data quality objectives with the exceptions noted below, if any.

Data	0	lifications
i jata	uma	ntications

Sample ID	Analytes	Qualifier	Reason for Qualification
T7-2	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
SK-2S-Hydra-8	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI					
Semple Delivery Group:	FA8757	_				
ysis Method:	8260B, metals	– Matrix	. 🗸 Wate	r 🗸 Soil	Other	
	AQUEOUS: SK-1S-VER2, SK-1S-VER	-	•	The second second		-
Sample Locations in Batch.		(0, 5K-15-VE	EK4, SK-15-V	VER8		
	SOIL: A10-2-17, A10-1-2, A10-1-5					
<u>A10-1-INT, A</u>	10-1-10, A10-1-15, A10-2-10, A10-2-15, A10-2	-5, A10-2-IN	T, A10-2-5, A	A10-2-0.5, A10-	-1-0.5	
Split Samples NONE	*					
Quality Control Samples As	sociated With Batch Field:	EQ, TB				
	Lab:		RI ANKS I A	AR SDIKES MS	S/MSD, SURROGA	TEC
Reviewed by & Date:	Kfuller 11/4/13	METHOD I	BE H VICE, E	ID 51 IKE5, WIL	5/MSD, SURROUA	ILS
Quality Control	Requirements			Check		Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.		(* See	QC Comments)		(see comments)
z www r ng complete (D1)	7 in required deriverables in pkg.					
	(Case Narrative/Conformance Summary,	 ✓ ок [_l No* ∟_l No	t provided	Comment#:	
	Results, COC, QC Summaries)					
	All samples on COC reported		No*		Comment#: 1	
Holding Times (HT)	Water	✓ OK		/A	Comment#:	Flags Applied
Containers and Preservation	Soil	✓ OK		/A		Flags Applied
Blanks (MB,TB,EB, FB/AB)		Lok √	/ No*		Comment#: 2	✓ Flags Applied
(110,10,20,10,10)	Method Blank	✓ No	Yes*	N/A	Comment#:	
	Trip Blank	✓ No		N/A	Comment#:	_
	Equipment Blank	□ No ✓		N/A	Comment#: 3	
(Blank Spike S)	LCS Data Provided	✓ OK	No*			
MS/MSD	Acceptance criteria met	✓ OK	No*		Comment#:	Flags Applied
W15/W15D	Matrix Spikes Provided Acceptance Limits:	✓ OK		ne*		Flags Applied
Surrogate Recovery Summa			No*		Comment#: 4	
Surrogate Recovery Summa	Method surrogates used Recovery Limits:	✓ OK	No* No	t provided	C	Flags Applied
Sample Evaluation	All hits within cal. Range		No*		Comment#: 5	
-	Sample Dilutions	□ No ✓			Comment#: 6	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	ОК	No* ✓ N/	A See	Analysis Below	Flags Applied
Sample Receipt Summary	NO ISSUES NOTED					
C. N. C. C.						
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED SUMMA	RIES OF HO	LD TIMES, QO	C ISSUES,	
AND CONFORMANCE.						
Review of field notes (note ar	ny deviations from work plan or other anomal	ies that may	bias data):			
	RAMETERS WERE NOT TAKEN PRIOR TO S			S SK-1S-VER2	SV-1S VED4	
	The state of the s	MINI LING.	51X-15-VLX(5, 5K-13-VER2	, 5K-15-VEK4	
		-				
Field Duplicate Analyis:	NOT APPLICABLE					
					_	

QC Item	Comments								
2	Samples not preserved to pH<2 for: SK-1S-VER4 - qualified below								
3	Detections in EQ for: Chloroform (J-value), Dichlorodifl	uoromethane (J-value), Toluene (J-value)						
4	MS/MSD failures were present. Al	l were evaluated.							
_	The laboratory case narrative provi-								
	Analyses for LCS met criteria for fa	ailed compounds, exce	ept where otherwise noted; therefore, acceptable precision						
	and accuracy are demonstrated by I	LCS QC.							
5	Samples out of calibration range: A10-2-17 (1,1,1-TCA) - lab qualified as E								
6	Some metals required dilutions due	to matrix interference	e. Details are provided in						
	case narrative. All diluted samples	have elevated reporting	ng limits to reflect the dilution.						
	No additional action required.								
	Some VOCs required dilutions due	to matrix interference	e. Details are provided in						
	case narrative. All diluted samples	have elevated reporting	ng limits to reflect the dilution.						
	No additional action required.								
1	Samples were collected in the field	for future analysis if	required and held at the lab.						
	Analysis of any held samples are re								
Inorganic Data Review	n this data package have been valid	ctober 1999. Data is t	th validation criteria presented in the EPA Functional Guidelines for Organic and found to be representative and quantitative meeting the precision and accuracy of the						
Data Qualifications									
Sample ID	Analytes	Qualifier	Reason for Qualification						
SK-1S-VER4	All Detected VOCs	J	Sample not properly preserved						
SK-1S-VER4		UJ	Sample not properly preserved						

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI	_								
Semple Delivery Group: FA8757R		_								
ysis Method: 8260B - VOLATILES			Mat	rix:	. E	Water	✓ Soil	Other		
Sample Locations in Batch:	SOIL: A10-1-10, A10-1-15	-							-	
•	AQUEOUS: NONE									
	AQUEOUS. NONE									
Split Samples NONE										
Quality Control Samples As	ssociated With Batch Field:	NO	NE							
	Lab:	ME	ТНС	DI	BLAN	IKS, LAB	SPIKES, MS	S/MSD, SURROC	GAT	ES
Reviewed by & Date:	LISA HENNESSY 11/1/2013									
One lite Control	D.	_				GI			_	
Quality Control	Requirements						eck Comments)			Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.					(" See QC	Comments)		+	(see comments)
	T C		ОК	Г	ີ No*	□ Not no	idad	C		
	(Case Narrative/Conformance Summary,		OK	L] MO∓	Not pr	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported		OK	1	No*	, ,		Comment#: 1		
Holding Times (HT)	Water		OK	┡	No*	✓ N/A		Comment#:	_	Flags Applied
C	Soil		OK	╄	No*	N/A			\perp	Flags Applied
Containers and Preservation Blanks (MB,TB,EB, FB/AB		1	OK		No*			Comment#:	+	Flags Applied
Dialiks (MD, 1 D, ED, FD/AD)	Method Blank	17	No		Yes*	S DN/		Comment#:		
	Trip Blank		No	┢	Yes*			Comment#: 2	_	
	Equipment Blank		No	十	Yes*			Comment#:		
(Blank Spike S)	LCS Data Provided	_	OK	\dagger	No*		`	Comments.	-	
	Acceptance criteria met		OK	Ī	No*			Comment#:		Flags Applied
MS/MSD	Matrix Spikes Provided	4	OK		No*	None ³	k	3		
	Acceptance Limits:		OK	4	No*			Comment#:		Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	$\overline{\mathbf{A}}$	OK		No*	Not p	rovided			Flags Applied
	Recovery Limits:	✓	OK		No*			Comment#:		riags Applied
Sample Evaluation	All hits within cal. Range		OK		No*			Comment#:		Flags Applied
	Sample Dilutions	<u> </u>	No		Yes*		-	Comment#:	'	
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK		No*	✓ N/A	See	Analysis Below		Flags Applied
Sample Receipt Summary	NO INTEGRITY ISSUED NOTED									
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	ILED	SUN	им	ARIF	S OF HO	LD TIMES	OC ISSUES		
AND CONFORMANCE.			-			.5 01 110		QC 1880 E89,		
AND CONFORMANCE.										я
Daviery of field notes (note a	my devictions from work plan on ether an ex-	Ľ., 41.	4		Ya Sana ali	1-4-5-				
	ny deviations from work plan or other anomal	nes th	iat m	ay	bias c	iata):				
NONE NOTED										
Field Duplicate Analyis:	NOT APPLICABLE									
_										

QC Item				Comments						
1	Sample	delivery group is only a parti	al set of FA875	57.						
	Sample	s were collected in the field fo	r future analys	sis if required and held at the lab.						
	This report contains analysis of some of the held samples and is reported separately.									
2	Trip bla	ank was associated with the pa	arent sample d	elivery group FA 8757 and is validated under that group.						
3	MS/MSD failures were present. All were evaluated.									
				lanations of the compounds failing.						
	Analys	es for LCS met criteria for faile	ed compounds	, except where otherwise noted; therefore, acceptable precision						
		curacy are demonstrated by LC								
	-									
				-						
Overall Data Ass			J. (. J !m	James with well-dation oritoric presented in the EDA Eunctional Cuidelines						
The results prese	ented in this Inorganic F	s data package have been valid Data Review (OSWER 9240.1-0	iated in accord 5A-P) dated O	dance with validation criteria presented in the EPA Functional Guidelines october 1999. Data is found to be representative and quantitative meeting						
the precision and	l accuracy o	of the data quality objectives w	vith the except	ions noted below, if any.						
Data Qualification	ons									
Sample I		Analytes	Qualifier	Reason for Qualification						
None		-	-	No qualification required						

Quality Control Samples Associated With Batch Field: TB Lab: METHOD BLANKS, LAB SPIKES, MSMSD, SURROGATES Reviewed by & Date: Kfuller 111/1/3 Quality Control Requirements Check (* See QC Comments) Flags Applied (we comments)	Project Name & Task:	Clean Harbors-Wichita Phase IV RFI		
Sample Locations in Batch: SK-2S-VER-6, SK-2S-VER-8, SK-2S-VER-10 SK-2S-VER-6, SK-2S-VER-8, SK-2S-VER-10 SK-2S-VER-6, SK-2S-VER-8, SK-2S-VER-10 SK-2S-VER-6, SK-2S-VER-8, SK-2S-VER-1, SK-12S-VER-6, T4-1, T5-1 Split Samples	Sample Delivery Group:	FA8770	_	
Sample Locations in Batch: SK-25-VER-6, SK-25-VER-8, SK-25-VER-4, SK-125-VER-4, SK-125-VER-6, T4-1, T5-1 Split Samples NONE Quality Control Samples Associated With Batch Field: TB Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES Reviewed by & Date: Kfuller 11/1/13 Quality Control Requirements Check (*See OC Comments) (*See OC C		8260B	Matrix ✓ Water Soil Other	
SK-2S-VER-2, SK-2S-VER-4, SK-12S-VER-2, SK-12S-VER-6, T4-1, T5-1				
Quality Control Samples Associated With Batch Field: TB	Sample Docations in Baten.			
Quality Control Samples Associated With Batch Field: TB Lab: METHOD BLANKS, LAB SPIKES, MSMSD, SURROGATES Reviewed by & Date: Kfuller 111/1/13 Quality Control Requirements Check (* See QC Comments) Flags Applied (we comments)		SK-28-VER-2, SK-28-VER-4, SK-128-	VER-2, SK-12S-VER-4, SK-12S-VER-6, T4-1, T5-1	
Quality Control Samples Associated With Batch Field: TB Lab: METHOD BLANKS, LAB SPIKES, MSMSD, SURROGATES Reviewed by & Date: Kfuller 111/1/13 Quality Control Requirements Check (* See QC Comments) Flags Applied (we comments)				
Case Narrative/Conformance Summary, Results ("All required deliverables in pkg." Case Narrative/Conformance Summary, Results, COC, QC Summaries) Containers and preservation Containers and Preservations Containers and preservation compliant QN QN QN QN QN QN QN Q	Split Samples NONE			
Case Narrative/Conformance Summary, Results ("All required deliverables in pkg." Case Narrative/Conformance Summary, Results, COC, QC Summaries) Containers and preservation Containers and Preservations Containers and preservation compliant QN QN QN QN QN QN QN Q				
Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES	Quality Control Samples Ass	sociated With Batch Field:	ТВ	
Reviewed by & Date: Kfuller 11/1/13 Requirements Requirements Flags Applied (see comments) Plags Applied Plags Appl			ANKS I AR SPIKES MS/MSD SUDDOGATES	
Quality Control Requirements Check (* Sec QC Comments) Flags Applied (see comments) Data Pkg Complete (DP) All required deliverables in pkg.	Daviewed by & Deter		ANKS, LAD STIKES, MS/MSD, SURROGATES	
Case Narrative/Conformance Summary, Results, COC, QC Summaries)		Riuliei 11/1/13		
All required deliverables in pkg. (Case Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported V OK No* Not provided Comment#:	Quality Control	Requirements		Flags Applied
Case Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported V OK No* No* Comment#:	Data Pla Complete (DP)	All associated delices and the control of	(* See QC Comments)	(see comments)
Case Narrative Comments: Results, COC, QC Summaries) All samples on COC reported V OK No* Comment#:	Data Pkg Complete (DP)	All required deliverables in pkg.		
Results, COC, QC Summaries) All samples on COC reported V OK No* No* Comment#:		(Case Narrative/Conformance Summary	✓ OK No* Not provided Comment#:	
All samples on COC reported				
Water			✓ OK No* Comment#:	
Containers and Preservations Blanks (MB, TB, EB, FB/AB) Detects (> MDL or RL) Method Blank Acceptance criteria met Acceptance Limits: Surrogate Recovery Summary Method Surrogates used Recovery Limits: All hits within cal. Range Sample Evaluation All hits within cal. Range Sample Evaluation Asmyle Evaluation Asmyle Dilutions Asmyle Precision of native vs field duplicate(s) NO I yes* NO I No* None* Comment#: Acceptance Criteria met NO I yes* NO I None* Comment#: Acceptance Criteria met NO I yes* No I None* Comment#: Acceptance Criteria met No I yes* No I None* Comment#: Acceptance Criteria met No I yes* N	Holding Times (HT)			Flags Applied
Blanks (MB,TB,EB,FB/AB) Detects (> MDL or RL) Method Blank	G			
Method Blank Trip Blank Equipment Blank Equipment Blank Fulpment Blank Equipment Blank Fulpment			OK V No* Comment#: 1	✓ Flags Applied
Trip Blank Equipment Blank LCS Data Provided Acceptance criteria met Acceptance Limits: DK V No* Comment#: Acceptance Limits: DK No* Comment#: Acceptance Limits: Acceptance Limits: Acceptance Limits: Acceptance Limits: Acceptance Limits: Acceptance Limits: Acceptanc	Dialiks (MD, ID, ED, FD/AB)		No Voc* N/A Commont# 2	_
Equipment Blank				-
LCS Data Provided				_
MS/MSD Matrix Spikes Provided Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok No* None* Acceptance Limits: Dok None* Dominity:	(Blank Spike S)			
Acceptance Limits: OK No* Comment#: 4 Flags Applied Surrogate Recovery Summary Method surrogates used Recovery Limits: OK No* Not provided Recovery Limits: OK No* Comment#: 5 Flags Applied Sample Evaluation All hits within cal. Range OK V No* Comment#: 5 Flags Applied Field Duplicate (FD) Precision of native vs field duplicate(s) OK No* V N/A See Analysis Below Flags Applied Flags App	150750			[♥] Flags Applied
Surrogate Recovery Summary Method surrogates used	MS/MSD			Flags Applied
Recovery Limits: V OK	C			- Inago / Applied
All hits within cal. Range Sample Evaluation All hits within cal. Range Sample Dilutions Sample Dilutions Sample Dilutions Sample Dilutions Sample Dilutions Sample Precision of native vs field duplicate(s) OK No* VN/A See Analysis Below Flags Applied Sample Receipt Summary NO ISSUES NOTED REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED	Surrogate Recovery Summar			Flags Applied
Sample Dilutions No Yes* Comment#: 6 Field Duplicate (FD) Precision of native vs field duplicate(s) OK No* No* No* No* See Analysis Below Flags Applied NO ISSUES NOTED REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED	Sample Evaluation			
Sample Receipt Summary NO ISSUES NOTED REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED	•			Flags Applied
Sample Receipt Summary NO ISSUES NOTED REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED	Field Duplicate (FD)	Precision of native vs field duplicate(s)		Flags Applied
Case Narrative Comments: REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED		-		
AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED	Sample Receipt Summary	NO ISSUES NOTED		
AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED				
AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED				
Review of field notes (note any deviations from work plan or other anomalies that may bias data): NO ISSUES NOTED	Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED SUMMARIES OF HOLD TIMES, QC ISSUES,	
NO ISSUES NOTED	AND CONFORMANCE.			
NO ISSUES NOTED				
NO ISSUES NOTED	Review of field notes (note an	y deviations from work plan or other anomal	ies that may bias data):	
Field Duplicate Analyis: NOT APPLICABLE	NO ISSUES NOTED			
Field Duplicate Analyis: NOT APPLICABLE				
Field Duplicate Analyis: NOT APPLICABLE				
	Field Duplicate Analyis: 1	NOT APPLICABLE		

QC Item Comments SK-2S-VER-2 had headspace, results are estimated - qualified below Method blank detection for: 1,2,3-TCB (J-value, below RL): SK-2S-VER-2, SK-2S-VER-4 LCS below limits for: 2-Chloroethyl vinyl ether (SK-2S-VER-2, SK-2S-VER-4, SK-12S-VER-2, SK-12S-VER-4, 3 SK-12S-VER-6, T4-1, T5-1) - qualified below LCS recoveries were above the limits for dichlorodifluoromethane, Acetone, and 2-Hexanone associated samples were ND so no additional action required. 4 MS/MSD failures were present. All were evaluated. The laboratory case narrative provides detailed explanations of the compounds failing. Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision and accuracy are demonstrated by LCS QC. 5 Calibration range exceeded by: SK-12S-VER-4 (PCE) - lab qualified as E 6 Some VOCs required dilutions due to matrix interference. Details are provided in case narrative. All diluted samples have elevated reporting limits to reflect the dilution. No additional action required.

Overall Data Assessment for Group:

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Data Quannications			
Sample ID	Analytes	Qualifier	Reason for Qualification
SK-2S-VER-2	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result
SK-2S-VER-4	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result
SK-12S-VER-2	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result
SK-12S-VER-4	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result
SK-12S-VER-6	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result
T4-1, T5-1	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result
CK 2C MED 2	Detected VOCS	J	Headspace in sample
SK-2S-VER-2	Non- Detected VOCS	UJ	Headspace in sample

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI									
Sample Delivery Group: FA8791		-								
ysis Method: 8260B, 8015 (DRO), Metals, TOC		-	Mat	rix:	· [-	Water	✓ Soil	Other		
Sample Locations in Batch:		-								
_		1 337	T							
SOIL: S11-1-	0.5, S11-1-2, S11-1-5, S11-1-10, S11-1-15, S11-	1-W	1							
Split Samples NONE										
Quality Control Samples As	sociated With Batch Field:	TR	IP BI	AN	JK					
	Lab:			_		KS. LAB	SPIKES. M	IS/MSD, SURRO	GA'	TES
D ' 11 0 D '	***************************************		71110) D2 11 4	Ito, El Ib	or inclo, ivi	io, Niob, ocitico	0/1	110
Reviewed by & Date:	Kate Fuller 11-4-13									
Quality Control	Requirements					Ch	eck			Flags Applied
		_				(* See QC (Comments)			(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.									
	(G) N (G) G (G)	~] ок] No*	Not pro	ovided	Comment#:		
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)									
	All samples on COC reported	1	ОК	Т	No*			Comment#:		
Holding Times (HT)	Water	1	_		No*	N/A		Comment#:		Flags Applied
8 (/	Soil		ОК	1	No*	□ N/A			1	✓ Flags Applied
Containers and Preservation			ОК	~	′ No*			Comment#:	2	Flags Applied
Blanks (MB,TB,EB, FB/AB)		_		_						
	Method Blank	1		Ļ	Yes*			Comment#:		
	Trip Blank	<u> </u>		┾	Yes*			Comment#:		-
(Blank Spike S)	Equipment Blank LCS Data Provided	-	No OK	╁	Yes*	✓ N/A		Comment#:		
(Diank Spike S)	Acceptance criteria met	H	OK	+	No*			Comment#:	3	✓ Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК	Ť	No*	None*		Comments.		
	Acceptance Limits:		ОК	7	No*			Comment#:	4	Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	4	Ок		No*	Not pr	ovided			D Floor Analised
	Recovery Limits:		ОК	4	No*			Comment#:	5	Flags Applied
Sample Evaluation	All hits within cal. Range		ОК		No*			Comment#:	6	Flags Applied
	Sample Dilutions	닏	No		Yes*			Comment#:	7	_
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK	L	No*	✓ N/A	Se	e Analysis Below		Flags Applied
C. I. D '. (C.	NO ICCLIEC NOTED									
Sample Receipt Summary	NO ISSUES NOTED									
C N C	DEVIEWED AND INCLUDE DETAIL	II 17T	CII	n	ADIE	C OF HO	D TIL (FC	OC ICCLUES		
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LEL	SUI	VIIV	IAKIE	S OF HOI	LD TIMES	, QC ISSUES,		
AND CONFORMANCE.										
Review of field notes (note a	ny deviations from work plan or other anoma	lies t	hat n	ıav	bias d	lata):				
NONE NOTED				,		,:				
NONE NOTED										
Field Duplicate Analyis:	NOT APPLICABLE									
							0			

QC Item	Comments
1	Samples were received within recommended hold times but not processed timely by the laboratory
	and inadvertently missed being analyzed within the method required time. See Data Qualification Table below.
2	Terracores were not available in the field. The samples were collected in jars and sent to the laboratory
	where they were transferred to vials upon receipt and within the recommended time for preservation.
	No additional action required.
3	LCS recoveries were above the limits for dichlorodifluoromethane, Acetone, and 2-Hexanone
	Associated samples were ND. No additional action required.
	LCS recoveries were below the acceptance limits for 2-chloroethyl vinyl ether
	Data for this compound is qualified with an "R". See Data Qualification table below.
4	MS/MSD failures were present. All were evaluated.
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
5	4-Bromoflurobenzene exceeds control limits for S11-1-5 on run 3. The associated compound, Acrolein was ND.
	No further action is required.
6	TCE was above calibration range and is lab flagged with an "E" for S11-1-2. No further action is required.
7	Sample dilution were required for VOC and metals analysis. Where diluted, the laboratory has provided
	elevated reporting limits and flags to denote the dilution. No additional qualification is required.

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Sample ID	Analytes	Qualifier	Reason for Qualification					
T3-1	2-chlorovinylethyl ether	R	Low recovery of compound in the laboratory control spike.					
S11-1-0.5			Analyzed outside hold time.					
S11-1-2		j UJ	Analyzed outside hold time.					
S11-1-5	Detected VOCs		Analyzed outside hold time.					
S11-1-10	Non-detected VOCs w		UJ	UJ	Analyzed outside hold time.			
S11-1-15			Analyzed outside hold time.					
S11-1-INT	9		Analyzed outside hold time.					

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI									
Sample Delivery Group:	FA 8792									
ysis Method: SW846	8260B, METALS	-	Mat	riv	. 7	Water	✓ Soil	Other		
Sample Locations in Batch: AQUEOUS: T7-1, SEBJ-1, A10-5, SEB		– BI-3								
\ <u></u>	1-INT, SEBJ-1-15, SEBJ-1-10, SEBJ-1-5, SEBJ									
A10-2-	2, A10-5-5, SEBJ-2-2, A10-3-2, A10-3-5, A10-	5-10,	, A10	-5-1	5, A1	0-5-0.5, A	10-5-INT, A1	0-3-INT, A10-3-	15,	A10-3-10
Split Samples NONE				,	0					
Quality Control Samples Ass	sociated With Batch Field:	TR	IP BI	AN	JKS (ГВ-9, ТВ-1	9. TB-10)			
	Lab:							/MSD, SURROC	247	TES
Reviewed by & Date:	 Kate Fuller 11/4/2013					110, 1110	7111120, 1110,	, wisb, service	JA	. 13
Reviewed by & Date.	Rate Fuller 11/4/2013									
Quality Control	Requirements	Т				Che	eck			Flags Applied
Data Blac Carrelate (DB)	AH : 1.11: 11 : 1	_				(* See QC (Comments)			(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.	_		_	_					
	(Case Narrative/Conformance Summary,	L	OK		No*	Not pro	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported	+	ОК	1	No*			Comment#: 1		
Holding Times (HT)	Water	~	ОК		No*	N/A		Comment#:		Flags Applied
	Soil		ОК	1	No*	N/A		Comment#: 2	2	Flags Applied
Containers and Preservation	s Containers and preservation compliant		ОК	1	No*			Comment#: 3	3	✓ Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)									
	Method Blank		No		Yes*			Comment#:		
	Trip Blank	✓	No	Ļ	Yes*			Comment#:		
	Equipment Blank	+	No	_	Yes*	✓ N/A		Comment#:		
(Blank Spike S)	LCS Data Provided	1	OK	<u> </u>	No*					✓ Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	+	OK		1			Comment#: 4		
1415/141510	Acceptance Limits:	\ 	OK OK	1	No*	None*		Comment#: 5		Flags Applied
Surrogate Recovery Summar		7	ok	F	No*	□ Not mu		Comment#. 3		
Surrogate Recovery Summar	Recovery Limits:	<u> </u>	OK	1	No*	Not pro	ovided	Comment#: 6	-	Flags Applied
Sample Evaluation	All hits within cal. Range	17	ОК	T	No*			Comment#:		
/ A	Sample Dilutions	П	No	1	1			Comment#: 7		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ок		No*	✓ N/A	See A	Analysis Below		Flags Applied
Sample Receipt Summary	TB-10 WAS SUBMITTED BUT NOT L	.OGC	GED	IN.	AND	INADVE	RTENTLY N	NOT ANALYZE	D.	
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LED	SUN	ИM.	ARIE	S OF HOL	D TIMES, Q	OC ISSUES,		
AND CONFORMANCE.										
Review of field notes (note an	y deviations from work plan or other anomal	ies tl	hat m	av l	hias d	ata).				
	FOR SAMPLES T7-1 AND SEBJ-1 DUE TO						AMDLE CO	I LECTED MUT		TIDE
Prince Manager Control of the Contro		TKC	OBL	L V	V1111	runir. 5.	AMPLE CO	LLECTED WITH	ні	UBE
AND CHECK VALVE. LEA	INING CELL ON: SEBJ-3.									
C'IID E	NOT A PRIVACE TO									
Field Duplicate Analyis:	NOT APPLICABLE									
							· · ·			

<u>C Item</u>	Comments						
2	Sample SEBJ-1 was not preserved to pH<2 and contained significant headspace: Data is qualified.						
	See Data Qualification Table below.						
3	Some soil samples were received out of hold. These samples were not analyzed or reported.						
	The locations were resampled.						
	LCS above limits for Dichlorodifluoromethane, Acetone -						
	associated samples were ND so no additional action required.						
	LCS below limits for 2-chloroethyl vinyl ether - qualify data - see Data Qualification Table below.						
5	MS/MSD failures were present. All were evaluated.						
	The laboratory case narrative provides detailed explanations of the compounds failing.						
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision						
	and accuracy are demonstrated by LCS QC.						
6	Surrogate recovery is high for batch VY492, all associated results are ND, with the exception of 1,1,1-TCE,						
	whch the lab has already qualified with a "J". No additional action required.						
7	Some metals required dilutions due to matrix interference. Details are provided in						
	case narrative. All diluted samples have elevated reporting limits to reflect the dilution.						
	No additional action required.						
1	Samples were collected in the field for future analysis if required and held at the lab.						
	Analysis of any held samples are reported separately.						

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Sample ID	Analytes	Qualifier	Reason for Qualification
CEDI 1	Detected VOCs	J	Not preserved, headspace
SEBJ-1	Non-Detected VOCs	UJ	Not preserved, headspace
SEBJ-1	2-chlorovinylethyl ether	R	Low LCS recovery

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI					
Sample Delivery Group:	8792R	_				
ysis Method: 8260B		— Matrix:	Water	✓ Soil	Other	
Sample Locations in Batch:			water	3011	Other	
Sample Locations in Batch:						
	AQUEOUS: NONE					
Split Samples NONE					В	
Quality Control Samples As	sociated With Batch Field:	NONE-ASS	OCIATED TRI	P BLANKS	VALIDATED WI	 ITH FA8792
-	Lab:				/MSD, SURROG	
Reviewed by & Date:	LISA HENNESSY 11/1/2013	111111000	El il (III)	or IRES, IVIS	, wisb, serred	ATES
	EISA HENNESS1 11/1/2015					
Quality Control	Requirements		Ch	eck		Flags Applied
Data Pkg Complete (DP)	All manying didiling the training		(* See QC	Comments)		(see comments)
Data Fkg Complete (DF)	All required deliverables in pkg.					
	(Case Narrative/Conformance Summary,	✓ OK _	No* Not pr	ovided	Comment#:	
	Results, COC, QC Summaries)	,				
	All samples on COC reported	Ок 🗸	No*		Comment#: 1	
Holding Times (HT)	Water	ОК	No* ✓ N/A		Comment#:	Flags Applied
0 11	Soil	✓ OK	No* N/A			Flags Applied
Containers and Preservation Blanks (MB,TB,EB, FB/AB)		✓ OK	No*		Comment#:	Flags Applied
Dialiks (MD, 1 D, ED, FD/AD)	Detects (> MDL or RL) Method Blank	I (I No.	V*			
	Trip Blank	✓ No No	Yes* N/A Yes* ✓ N/A		Comment#: 2	_
	Equipment Blank	No	Yes* ✓ N/A		Comment#:	_
(Blank Spike S)	LCS Data Provided	✓ OK	No*		Comment.	
Manage	Acceptance criteria met	✓ OK	No*		Comment#:	Flags Applied
MS/MSD	Matrix Spikes Provided	✓ OK	No* None*			Flags Applied
S S.	Acceptance Limits:		No*		Comment#: 3	riags Applied
Surrogate Recovery Summa	Method surrogates used Recovery Limits:	✓ OK _	No* Not pr	ovided		Flags Applied
Sample Evaluation	All hits within cal. Range		No*		Comment#:	
F	Sample Dilutions		Yes*		Comment#:	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		No* ✓ N/A	See	Analysis Below	Flags Applied
				500 1	marysis Below	riags Applied
Sample Receipt Summary	NONE NOTED					
Case Narrative Comments:	REVIEWED AND INCLUDES DETA	ILED SUMMA	ARIES OF HOL	D TIMES, Q	QC ISSUES,	
AND CONFORMANCE.						
Review of field notes (note an	y deviations from work plan or other anoma	lies that may b	ing data).			
	y deviations from work plan of other anoma	mes mat may n	nas data):			
NONE NOTED						
		·				
Field Duplicate Analyis:	NOT APPLICABLE		·	3		

QC Item	Comments											
1 <u>T</u>	his sample delivery group contains	only VOC ana	lysis for 2 samples associated with FA 8792.									
Т	These samples were collected in the field for future analysis and held at the lab. They were requested											
to	to be analyzed later and a change order to the lab submitted.											
2 T	Two trip blanks were associated with the parent sample delivery group FA 8792 and are validated under that											
<u>g</u>	group											
3 N	MS/MSD failures for the following compounds:											
_	N-Butylbenzene - recovery low											
	cis-1,3-dichloropropene - recovery	low										
	Methyltertbutyl Ether - recovery l	ow										
	Naphthalene - recovery low											
	1,2-Dibromo-3-chloropropane - R	PD exceeds lim	it									
	he laboratory case narrative provid	es detailed exp	lanations of the compounds failing.									
	analyses for LCS met criteria for fail	ed compounds	, except where otherwise noted; therefore, acceptable precision									
a	nd accuracy are demonstrated by L	CS QC.										
	2											
Overall Data Assessn	nent for Group:											
The results presented	in this data package have been vali	dated in accord	lance with validation criteria presented in the EPA Functional Guidelines									
for Organic and Inorg	anic Data Review (OSWER 9240.1-	05A-P) dated O	ctober 1999. Data is found to be representative and quantitative meeting									
the precision and accu	racy of the data quality objectives	with the except	ions noted below, if any.									
Data Qualifications												
Sample ID	Analytes	Qualifier	Reason for Qualification									
None		-	No qualification required									
Tronc												

Project Name & Task: Cle	ean Harbors-Wichita Phase IV RFI									
Sample Delivery Group: FA	8798	-								
_	OLATILES	-	Mat		. 「	Water	✓ Soil	Other		
		-			•	_		Other		F
Sample Locations in Batch:	AQUEOUS: DUP-106, DUP-102, SK-1	S, E	Q-2,	S18	-3, T8	3-4, DUP-1	04, S17-2			
	SOIL: S18-3-5, S17-2-INT, SEBJ-2-10,	SEI	BJ-2-I	NT	, S18-	3-INT, S18	3-3-15, S18-3	3-10, S17-2-10, S	18-3	-0.5,
	S18-3-2									
Soil Split Samples: DU	JP-105 - SPLIT WITH SAMPLE S18-3-5									
Quality Control Samples Associ	inted With Datab Fields	DI	ID 10	6 T	OLID 1	02 EO 2	DIID 104 C	DI IT C10 2 F		
Quanty Control Samples Associ	Lab:							PLIT S18-3-5	C 41	
	**************************************	MIE	STHC	ו ענ	3LAN	IKS, LAB	SPIKES, MS	S/MSD, SURRO	GA.	TES
Reviewed by & Date: LIS	SA HENNESSY 11/4/2013									
Quality Control	Requirements	T				Ch	eck			Flags Applied
						(* See QC				(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.									
		~	OK] No*	☐ Not pr	ovided	Comment#:		
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)									
	All samples on COC reported	1	ОК	Т	No*			Comment#:		1
Holding Times (HT)	Water	1			No*	N/A		Comment#:		Flags Applied
	Soil	4	ОК		No*	□ N/A				Flags Applied
Containers and Preservations	Containers and preservation compliant	1	OK		No*			Comment#:		Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL) Method Blank	1.7	No	$\overline{}$	Yes*		9	Commontil		
	Trip Blank	1	No	十	Yes*			Comment#:	1	
	Equipment Blank		No	7	_			Comment#:	2	
(Blank Spike S)	LCS Data Provided	√	ОК		No*					[/ Flags Applied
MORIOD	Acceptance criteria met	4	ОК	1	7.10			Comment#:	3	✓ Flags Applied
MS/MSD	Matrix Spikes Provided Acceptance Limits:	-	 ∪ı、	-	No*	None*		C	_	Flags Applied
Surrogate Recovery Summary	Method surrogates used	-	OK OK	F	No*	□ Nah m		Comment#:	4	The post of the po
Surrogate Recovery Summary	Recovery Limits:	1		十	No*	Not pr	ovided	Comment#:	_	Flags Applied
Sample Evaluation	All hits within cal. Range	1	1	Ť	No*			Comment#:	5	
	Sample Dilutions		No	4	Yes*			Comment#:	6	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	✓] ok] No*	□ N/A	See	Analysis Below		Flags Applied
C 1 D 1 4 C	TENER BY AN HE PROVIDED ANOTHER									
Sample Receipt Summary	TRIP BLANK PROVIDED; HOWEVE	RN	OT M	1Al	RKED	ON CHA	IN SO LAB	ORATORY DIE	N'T	,
ANALYZE IT.										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	IEI	SLIN	лм	ADIE	S OF HO	D TIMES	OC ICCLIEC		
AND CONFORMANCE.	MEVIEWED THAT INCECOES DETTI	LLL	7501	VIIVI	ARIE	3 OF HO	LD TIMES,	QC 1330E3,		
AND CONFORMANCE.										
Review of field notes (note any d	leviations from work plan or other anomal	ies t	hat m	ay	bias d	lata):	·			
FLOW THROUGH FLOW-THI	RU-CELL WAS INSUFFICIENT TO COL	LEC	T FII	ELI) PAR	RAMETER	SAMPLE V	WAS COLLECT	ED I	USING
CHECK-VALUE TUBE ASSEM	IBLY FOR S18-3									
Field Duplicate Analyis: NO	T APPLICABLE - RPD CALCULATIONS A	ΔRF	TOM	r pr	REOI	MED ON	SOII SDI I	L C V WDI E C		
	5% DUP-104 = S17-2 MAX RPD= 25%	7.0								
								FA8800 MAX I	(LD	- 10%
	ECISION IS EVALUATED AGAINST A	ИΑХ	XIMU	JM	ALLC	OWABLE	KPD OF 40°	%.		
PRECISION OF THIS AN	JALYSIS IS ACCEPTABLE.									

QC Item	<u>Comments</u>
2	EQ-2 is a field equipment blank. Compounds were detected in the blank at low
	concentrations below the reporting limit and are qualified with the "J" flag.
3	5 groups of LC spikes were included in this batch. All met QC requirements except for the following:
	2-Chloroethyl vinyl ether - recovery low, qualified in table below
	Acetone - recovery high (affects samples: S18-3-15, S18-3-10, S17-2-10, S18-3-2) Sample results were ND
	therefore, no additional action is required.
4	6 MS/MSD's are associated with this batch
	MS/MSD failures were present. All were evaluated.
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
5	Sample result for T8-4 for compound 1.1,1-TCA is out of range and qualified by lab. No additional action needed.
	Sample result for S17-2 for compound PCE is out of range and qualified by lab. No additional action needed.
	Sample result for DUP-104 for compound PCE is out of range and qualified by lab. No additional action needed.
6	1,1, 1-TCA was diluted by a factor of 2 in sample T8-4. Result is flagged by laboratory-no additional
	action required.
1	Trip blank not on COC and not analyzed.

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Data Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
DUP-102	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
EQ-2	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
S18-3	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
T8-4	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
DUP-104	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
S17-2	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
DUP-106	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
SK-1S	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI								
Semple Delivery Group:	FA8799								
ysis Method:	8260B, 8015C	-	Ma	trix	. [/ Water	✓ Soil	Other	
Sample Locations in Batch:		-							
	SOIL: S11-2-0.5, S11-2-2, S11-2-10, S11	1_2_1	15						
			13						*
	S11-3-0.5, S11-2-5, S11-2-WT, S11-3-W	1			-				
Split Samples NONE									
Quality Control Samples As	sociated With Batch Field:	TB							
	Lab:	MF	ЕТНС	D I	BLAN	KS, LAB S	SPIKES, MS	S/MSD, SURROGAT	ES
Reviewed by & Date:	Kfuller 11/4/13								
Quality Control	D. milion and					CI			
Quality Control	Requirements					(* See QC	eck		Flags Applied (see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.					(see QC	comments)		(see comments)
		~	ОК	Г	ີ No*	☐ Not pr	ovidad	C	
	(Case Narrative/Conformance Summary,		JOK	L_		□ NOT PI	ovided	Comment#:	
	Results, COC, QC Summaries)	<u> </u>	,	_	_				
Holding Times (HT)	All samples on COC reported	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		_	No*			Comment#:	
Holding Times (HT)	Water Soil	1		+	No*	N/A		Comment#:	Flags Applied
Containers and Preservation		1		┾	No*	∐ N/A		Comment#:	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB)		1	JOK		INO			Comment.	riags Applied
	Method Blank		No	7	Yes*	N/A		Comment#: 1	-
	Trip Blank		No	7				Comment#: 2	
	Equipment Blank		No		Yes*			Comment#:	
(Blank Spike S)	LCS Data Provided	1			No*				✓ Flags Applied
MOMOR	Acceptance criteria met	╙	ОК		-			Comment#: 3	1 lags Applied
MS/MSD	Matrix Spikes Provided Acceptance Limits:	~	OK OK		No*	None*		Comment#: 4	Flags Applied
Surrogate Recovery Summa		~		卡	No*	□ Net m		Comment#: 4	
Surrogate Recovery Summa	Recovery Limits:	H	OK	╁	No*	Not pr	ovided	Comment#: 5	Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	Ť	No*			Comment#:	
_	Sample Dilutions		No	7	Yes*			Comment#: 6	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК		No*	✓ N/A	See	Analysis Below	Flags Applied
Sample Receipt Summary	NO ISSUES NOTED								
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED	STIM	MΛ	DIEC	OE HOLD	TIMES OF	CICCIEC	
	REVIEWED THAD INCECUDES DETAIL.	LD .	3 O IVI	VIA	KILS	OF HOLD	TIVIES, QC	2 155UE5,	
AND CONFORMANCE.									
Review of field notes (note an	ny deviations from work plan or other anomal	ies t	hat n	ıay	bias d	lata):			
NO ISSUES NOTED									
Field Duplicate Analyis:	NOT APPLICABLE								

QC Item				Comments							
1	Method blank	detection of: Methylene ch	loride (S11-2-0.	.5, S11-2-2, S11-2-10, S11-2-5)							
D.											
2	Trip blank dete	ction of: Toluene (J-value	, below RL)								
	Trip blank dete	ction of Methylene Chlori	de (J-value, belo	ow RL)							
3	LCS below lim	its for: 2-Chloroethyl viny	d ether (S11-3, S	S11-2) - qualified below							
	LCS recoveries	were above the limits for	dichlorodifluoro	omethane							
4	MS/MSD failu	res were present. All were	e evaluated.								
				ons of the compounds failing.							
	Analyses for L	CS met criteria for failed c	ompounds, exce	ept where otherwise noted; therefore, acceptable precision							
	and accuracy a	re demonstrated by LCS Q	C.								
5	Recovery data	outside of QC reviewed; n	o additional act	ion required.							
6	Sample dilution	ns up to 10									
Overall Data	Assessment for Group	:									
The results pre	sented in this data pack	age have been validated in	accordance wit	th validation criteria presented in the EPA Functional Guidelines for Organic and							
Inorganic Data	Review (OSWER 924	0.1-05A-P) dated October	1999. Data is f	found to be representative and quantitative meeting the precision and accuracy of the							
data quality ob	jectives with the except	tions noted below, if any.									
Data Qualific	ations										
Samj	ole ID	Analytes	Qualifier	Reason for Qualification							
S1	1-3 2-0	Chloroethyl vinyl ether	R	LCS low on ND result							
S1	1-2 2-0	Chloroethyl vinyl ether	R	LCS low on ND result							

THE RESIDENCE OF THE PERSON OF			CHECKER HARDS								
Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Semple Delivery Group:	FA8800	-									
ysis Method:	8260B-VOLATILES	-	Mat	riv.		Water	✓ Soil	Other			
		• 15 (_		
Sample Locations in Batch:		15, 8	517-2	5, 8	1/-2-	0.5, 817-2	-2				
	AQUEOUS: SEBJ -2, T8-3										
Split Samples DUP-	101 (SEBJ-2-15), DUP-103 (S17-2-5)										
Quality Control Samples As	ssociated With Batch Field:	DI	IP-10	7 (T	8-3)	AQUEOUS	1				
Quanty Control Samples 14.								C + TOTAL		, et al. (1)	
	Lab: METHOD BLA	ANK	(S, L	AB	SPIK	ES, MS/MS	SD, SURRO	GATES			
Reviewed by & Date:	LISA HENNESSY 11/1/2013										
Quality Control	Requirements	П				Ch	eck		T	Flags Ap	pplied
						(* See QC	Comments)			(see com	
Data Pkg Complete (DP)	All required deliverables in pkg.										
	(0) 1 (0)	~	Ок] No*	☐ Not pr	ovided	Comment#:			
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)										
	All samples on COC reported	1	ОК		No*			Comment#:	+		
Holding Times (HT)	Water	1		+	No*	N/A		Comment#:	+	Flags A	Applied
	Soil	1	ОК	Ī	No*	□ N/A			ΤĒ	Flags A	
Containers and Preservation		1	ОК		No*			Comment#:	\top	Flags A	
Blanks (MB,TB,EB, FB/AB		_		_	_						
	Method Blank	~		┾	Yes*			Comment#:			
	Trip Blank Equipment Blank	F	No No	┾	Yes*			Comment#: 1	-		
(Blank Spike S)	LCS Data Provided	1	OK	十	No*	Ŭ N/A	<u> </u>	Comment#:	+-	_	
(Acceptance criteria met		ОК	1	-			Comment#: 2	L	✓ Flags A	Applied
MS/MSD	Matrix Spikes Provided	4	ОК		No*	☐ None*				7	
	Acceptance Limits:	Ļ	ОК	√	No*			Comment#: 3	<u> </u>	Flags A	ррпеа
Surrogate Recovery Summa		1	ОК	L	No*	☐ Not pr	ovided		٦	Flags A	Applied
C. I.F. I. d'	Recovery Limits:		OK	L	No*			Comment#:			фриса
Sample Evaluation	All hits within cal. Range Sample Dilutions			╄	No*			Comment#:	- [Flags A	Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	7	No OK	ᅷ	Yes*		C	Comment#:	+	7 51 4	and the d
ricia Duplicate (FD)	Frecision of native vs field duplicate(s)		JOK	_] 140	IN/A	See	Analysis Below		Flags A	фриеа
Sample Receipt Summary	SOIL TRIP BLANK NOTED ON CHAIN	1 BI	JT NO	T T	RECE	IVED. CO	OLER TEM	P WITHIN			
REQUIREMENTS, ALL SAI											
TacQCHactvier(15, 7all 57a	WILLS INTACT.										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED !	SUM	MA]	RIES	OF HOLD	TIMES, QC	CISSUES,			
AND CONFORMANCE.								,			
THE COLL CHARLES.											
D : (C)			_								
	ny deviations from work plan or other anomal			-							
T8-3 NOT ENOUGH WATE	R RECHARGE TO PROVIDE ADEQUATE FLO	<u>W</u> C	THR	OUC	GH FI	LOW-THR	U-CELL - R	ETRIEVED SAMP	LE		
VOLUME FOR T8-3 USING	TUBE AND CHECK VALVE.									(4)	
								-			
Field Duplicate Analyis:	DUP-107 = T8-3 = MAX RPD = 36%										
•		TEL) AG	\ INT	ST A	MAYIMI	MALLOW	ADI E DDD OE 400			
	PRECISION OF THIS ANALYSIS IS A COEPT			TIIN	oi A	IVIAAIIVIU	IVI ALLUWA	ADLE KPD OF 40%	0.		
	PRECISION OF THIS ANALYSIS IS ACCEPT	ABI	LE.								

QC Item	<u>Comments</u>										
1	Trip blank on chain but not received or analyzed.	_									
2	3 LCS/LCSD summaries provided. There were low recoveries of 2-chloroethyl vinyl ether.										
	Data for these compounds are qualified with an "R". See Data Qualification table below.										
3	3 MS/MSD's were provided.										
	The laboratory case narrative provides detailed explanations of the compounds failing.)									
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision										
	and accuracy are demonstrated by LCS QC.										
		-									
		_									

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Sample ID	Analytes	Qualifier	Reason for Qualification
SEBJ-2	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
DUP-107	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
T8-3	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND

Project Name & Task: Clean Harbors-Wichita Phase IV RFI											
Sample Delivery Group:	FA8801										
ysis Method:	VOC'S, METALS, DRO, GEN CHEM	-	Mat	rix:	~	Water	Soil	Other			
Sample Locations in Batch:		-								_	
	SOIL: None										
Split Samples NONE											
											15
Quality Control Samples As	sociated With Batch Field:	TR	IP BL	AN	K						
	Lab: METHOD BL.	ANK	KS, LA	AB :	SPIKE	ES, MS/MS	SD, SURRO	GATES			
Reviewed by & Date:	LISA HENNESSY 11/4/2013										
Quality Control	Requirements	=				Ch	eck				
Quanty Control	Requirements				(·		Comments)				Flags Applied see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.					Str QC	Comments)			(3	ee comments)
		1	ОК	Г] No*	☐ Not pr	ovidad	C			
	(Case Narrative/Conformance Summary,	-	Jok	_] 140	Not bi	ovided	Comment#:			
	Results, COC, QC Summaries)	_									
H-14: T: (HT)	All samples on COC reported	<u> '</u>	ОК	+	No*			Comment#:	-	_	7
Holding Times (HT)	Water Soil	├	OK	✓	1	N/A	*	Comment#:	1	H	Flags Applied
Containers and Preservation		-	OK OK	┾	No*	✓ N/A		Comment#:		+	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB)		1	JOK] NO			Comment#.			_ riags Applied
, , , , , ,	Method Blank	1	No		Yes*	□ N/A		Comment#:			
	Trip Blank		No	~				Comment#:	2		
	Equipment Blank		No		Yes*	✓ N/A	L.	Comment#:			
(Blank Spike S)	LCS Data Provided	1	ОК	L	No*					~	Flags Applied
MS/MSD	Acceptance criteria met	├	OK	V	No*	П., .		Comment#:	3	_	
W15/W15D	Matrix Spikes Provided Acceptance Limits:	~	OK OK	1	No*	None*		Comment#:	1		Flags Applied
Surrogate Recovery Summa		 	ok]ok	늗	No*	Пын	and dead	Comment#:	4		
Surrogate Recovery Summa	Recovery Limits:	1	OK	十	No*	Not pr	ovided	Comment#:] Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	Ť	No*			Comment#:		_	
•	Sample Dilutions		No	1	1			Comment#:	5	L	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК		No*	☐ N/A	See	Analysis Below			Flags Applied
Sample Receipt Summary	SAMPLES WERE PRESERVED CORRI	ECT	LYA	ND	NO I	NTEGRIT	Y ISSUES N	OTED.			
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED S	SUMN	MAl	RIES (OF HOLD	TIMES, QC	ISSUES,			
AND CONFORMANCE.											
Review of field notes (note as	ny deviations from work plan or other anomal	: t	hat ==		hiaa d	atala NG	NIE NOTED				
Review of field flotes (flote a)	ny deviations from work plan of other anomal	ies t	nat m	ay	DIAS U	ata): NC	NE NOTED	<u> </u>			
										—	
Field Duplicate Analyis:	NOT APPLICABLE										
		_									

QC Item	Comments									
1	Wet chemistry analysis for pH was analyzed out of hold - No action required as this									
	parameter was collected in the field at the time of sample collection.									
2	Toluene was detected in the trip blank at low concentrations - Toluene was not detected in sample S11-1;									
	therefore, no additional action required									
3	LCS Spike for 2-Chloroethyl vinyl ether was recovered low									
	Data for these compounds are qualified with an "R". See Data Qualification table below.									
4	MS/MSD failures were present. All were evaluated.									
	The laboratory case narrative provides detailed explanations of the compounds failing.									
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision									
	and accuracy are demonstrated by LCS QC.									
5	Dilutions were required for the inorganic chemistry analyses - reporting limits were elevated to reflect the									
	dilutions are reported - no additional action required.									

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Sample ID	Analytes	Qualifier	Reason for Qualification
S11-1	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND
TB-8	2-Chloroethyl vinyl ether	R	LCS recovery out of QC limits and sample result is ND

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI											
Sample Delivery Group:	FA8825	-										
ysis Method: TO-15		-	Ma	trix	. C	Water	Soil	✓ Other		Air	r	
Sample Locations in Batch:	AS-1 - Basement	-										
	AS-2-Main Floor											
-	AIR-Background											
Split Samples NONE												
Spiit Samples NONE						9						
Quality Control Samples As		NC	ONE									
	Lab: METH	IOF) BL	\N	KS, L	AB SPIKE	S					
Reviewed by & Date:	Kate Fuller 12/2/13											
Quality Control	Requirements	_				Ch	a als				71. A 11. 1	
Quanty Control	Requirements					(* See QC				Flags Applied (see comments)		
Data Pkg Complete (DP)	All required deliverables in pkg.					(str qe	comments)				see comments)	
		~	Ок		7 No*	☐ Not pr	ovided	Comment#:				
	(Case Narrative/Conformance Summary,	-			_ 140	Not pr	ovided	Comment#:				
	Results, COC, QC Summaries)	_	_	_	_							
Holding Times (HT)	All samples on COC reported Air	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<u> </u>	+	No*	1 1,1/4		Comment#:		_	T	
Holding Times (H1)	Soil	-	OK OK	┾	No*	N/A ✓ N/A		Comment#:		H	Flags Applied	
Containers and Preservation	1950 (1950)	1	OK	十	No*	Ŭ N/A		Comment#:		十	Flags Applied Flags Applied	
Blanks (MB,TB,EB, FB/AB)			JOK		INO			Comment#.		_] riags Applied	
, , , , , , , , , , , , , , , , , , , ,	Method Blank	1	No	Т	Yes*	N/A		Comment#:				
	Trip Blank		No		Yes*			Comment#:	1			
	Equipment Blank		No		Yes*			Comment#:				
(Blank Spike S)	LCS Data Provided	4	ОК		No*					$\overline{}$	l Class Assiliad	
150750	Acceptance criteria met	✓	ОК	L	No*			Comment#:			Flags Applied	
MS/MSD	Matrix Spikes Provided	┡	OK	╄	No*	✓ None*	:				Flags Applied	
	Acceptance Limits:	늗	OK	누	No*			Comment#:		_	, I lags Applied	
Surrogate Recovery Summa			OK	누	No*	☐ Not pr	ovided				Flags Applied	
Sample Evaluation	Recovery Limits: All hits within cal. Range	\ <u>\</u>	OK	+	No*			Comment#:				
Sample Evaluation	Sample Dilutions	\ \	OK	1				Comment#:	_		Flags Applied	
Field Duplicate (FD)		H	No OK	F	No*	✓ N/A	-	Comment#:	2	$\overline{}$	1	
ricid Duplicate (FD)	Precision of native vs field duplicate(s)		JUK	_] 140	Ŭ N/A	Sec	Analysis Below		<u> </u>	Flags Applied	
Sample Receipt Summary	NO ISSUES NOTED											
p 2.000-p 2.000-y	THE RESCREST HOTEE											
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LEC	SUN	лм	ARIF	S OF HOI	DTIMES	OC ISSUES				
			001	1111	7 11(11)	5 01 1101	ID THVILO,	QC 1550E5,				
AND CONFORMANCE.				-								
Review of field notes (note ar	ny deviations from work plan or other anomal	ies t	hat n	ay	bias d	lata): NON	NE NOTEI					
			-									
Field Duplicate Analyis:	NOT APPLICABLE											

QC Item			<u>Comments</u>
1 Trip	blank not required for air samp	les	
			to the death of the Nicel Educati
	<u> </u>	ed. Reporting I	imits are modified to reflect dilutions. No additional
actio	on required.		
Overall Data Assessmen			
The results presented in	this data package have been val	idated in accord	dance with validation criteria presented in the EPA Functional Guidelines
for Organic and Inorgan	ic Data Review (OSWER 9240.1-	05A-P) dated C	ctober 1999. Data is found to be representative and quantitative meeting
the precision and accura	cy of the data quality objectives	with the except	ions noted below, if any.
Data Qualifications			
		1	D (O 10 t)
Sample ID	Analytes	Qualifier	Reason for Qualification
None	-	-	No additional action required
		+	
		+	

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI									
Semple Delivery Group:	FA8832	_								
ysis Method: 8260E	3	_	Ma	triv	. [✓ Water	Soil	Other		
Sample Locations in Batch:	SK-12S, T8-0, T8-5, T8-2, T8-1, T4-3, S	- :V 2		LIIA		_		outer	n-	
parent and a second in Button	514-125, 16-0, 16-3, 16-2, 16-1, 14-3, 8)N-2	3							
-										
Split Samples										
Quality Control Samples As	ssociated With Batch Field: DUP-1001 (TE	8-5),	DUP	-100)2 (T	8-2), DUP-1	000 (T8-0)	DUP-1003 (T8-1)		
	Lab: METHOD BL						In the second se			
Reviewed by & Date:	LHennessy 11/4/13	AINI	10, L	АВ	SLIV	E5, M5/M5	D, SUKKU	GATES		
	Effetinessy 11/4/13									
Quality Control	Requirements					Cho	eck		T	Flags Applied
Data Pkg Complete (DP)	All magning distributions 1.1					(* See QC (Comments)			(see comments)
Data 1 kg Complete (D1)	All required deliverables in pkg.	_	,							
	(Case Narrative/Conformance Summary,	~	OK		No*	Not pro	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported	1	ОК	Т	No*			Comment#:	+	
Holding Times (HT)	Water		ОК		No*			Comment#:	+	Flags Applied
G	Soil		ОК		No*				T	Flags Applied
Containers and Preservation Blanks (MB,TB,EB, FB/AB)	person auton compitant	4	ОК		No*			Comment#:		Flags Applied
Dialiks (MD, I D, ED, FD/AB)	Detects (> MDL or RL) Method Blank	 	T		1					
	Trip Blank		No No	✓ ✓	1			Comment#: 1	_	
	Equipment Blank		No	Ť	Yes*			Comment#: 3	4	
(Blank Spike S)	LCS Data Provided		ОК		No*	IV/A		Comment#:	+-	
	Acceptance criteria met		ОК	1	No*			Comment#: 2	L	✓ Flags Applied
MS/MSD	Matrix Spikes Provided		OK		No*	☐ None*				7-
	Acceptance Limits:		OK	✓	No*			Comment#: 4		Flags Applied
Surrogate Recovery Summa	8		OK		No*	Not pro	vided		Г	Flags Applied
Sample Evaluation	Recovery Limits: All hits within cal. Range		OK	\vdash	No*			Comment#:		riags Applied
Sumple Evaluation	Sample Dilutions		OK No	\vdash	No*		-	Comment#:	⊣ Γ	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK		Yes* No*		-	Comment#:	+	
	recision of native vs field duplicate(s)		OK	Ľ	NO.	∐ N/A	See A	Analysis Below	<u> </u>	✓ Flags Applied
Sample Receipt Summary	No issues noted.									
•										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAILE	ED S	UMN	/AF	RIES (OF HOLD	TIMES OC	ISSUES		
AND CONFORMANCE.						or riobb.	inibo, QC	ibboLb,		
) · · · · · · · · · · · · · · · · · · ·										
	y deviations from work plan or other anomali	es th	at m	ay b	ias d	ata):				
No issues noted.										
ield Duplicate Analyis:	DUP-1001 = T8-5 = RPD ANALYSIS - MAX = 2	230/2	WILD	CH	ICII	ECC THAN	400/			
	OUP-1002 = T8-2 = RPD ANALYSIS - MAX =									
	DUP-1000 = T8-0 = RPD ANALYSIS - MAX = S									
<u> </u>	$\underline{OUP-1003} = T8-1 = RPD \text{ ANALYSIS - MAX} = 3$	17%	WHI	СН	IS LF	ESS THAN	40%			

QC Item				Comments
1	Method 1	blank detection of: 1,2,3-Trichloro	obenzene (>MD	1, <rl) dup-1001,="" dup-1002,<="" for="" sk-12s,="" t8-0,="" t8-2,="" t8-5,="" td=""></rl)>
		00, DUP-1003, T8-1. No detection		
2	LCS reco	overy low for: 2-Chloroethyl viny	l ether - qualifie	ed below
3	Trip blan	nk detections: Toluene and Chloro	bbenzene (>MD)	L, < RL) - lab qualified associated samples with a J
4	Only MS	S completed, not MSD		
	-			
Overall Data Asse	essment for	Group:		
Inorganic Data Rev	view (OSWI	nta package have been validated in ER 9240.1-05A-P) dated October the exceptions noted below, if any.	accordance wit 1999. Data is f	h validation criteria presented in the EPA Functional Guidelines for Organic and Sound to be representative and quantitative meeting the precision and accuracy of the
Data Qualificatio	ons			
Sample I		Analytes	Qualifier	Reason for Qualification
T4-3		2-Chloroethyl vinyl ether	R	LCS recovery low
SK-2S	3	2-Chloroethyl vinyl ether	R	LCS recovery low
TB-20)	2-Chloroethyl vinyl ether	R	LCS recovery low
T8-0		N-Butylbenzene, sec- Butylbenzene,	J	Poor duplicate precision
DUP-10	00	Isopropylbenzene, 4-Methyl-2-	J	Poor duplicate precision

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI								7	
Semple Delivery Group:	FA8833	_								
ysis Method: 8260B	, TOXAPHENE, METALS, SVOC, TOC	-	Mat	rix		/ Water	✓ Soil	Other		
Sample Locations in Batch:		- TRI	P BL	AN	K				_	
_	CC-2, CC-3, CC-4		1 55.							
301L. CC-1, C	20-2, 00-3, 00-4									
Split Samples NONE										
Quality Control Samples As	ssociated With Batch Field:	NC	ONE							
	Lab:	MF	THO	D I	BLAN	JKS, LAB	SPIKES, MS	S/MSD, SURROG	ATE	S
Reviewed by & Date:	LISA HENNESSY 11/5/2013					,		,,,		
		_								
Quality Control	Requirements					Ch			- 1	Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	_				(* See QC	comments)		_	(see comments)
g ()		[Ок	_	7	Π				
	(Case Narrative/Conformance Summary,	•	JOK	L	J No*	Not pr	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported	1	ОК		No*			Comment#:		
Holding Times (HT)	Water Soil	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Ļ	No*	N/A		Comment#:	<u> </u>	Flags Applied
Containers and Preservation		\ \ \	OK	┾	No*	N/A		C	+	Flags Applied
Blanks (MB,TB,EB, FB/AB)		14	OK		No*			Comment#:	+-	Flags Applied
	Method Blank	1	No	Т	Yes*	N/A		Comment#:	\dashv	
	Trip Blank		No	1	1			Comment#: 1		
	Equipment Blank		No		Yes*			Comment#:		
(Blank Spike S)	LCS Data Provided	1	OK	L	No*				Тг	Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	╬	OK	V	No*			Comment#: 2		
1415/1415 D	Acceptance Limits:	┢	OK OK	┢	No*	None*	***************************************	Comment#: 3	-	Flags Applied
Surrogate Recovery Summa		1	ok	F	No*	Not pr	ovidad	Comment. 3		
Samua	Recovery Limits:	1	ОК	十	No*	Not pi	oviueu	Comment#:	\dashv L	Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	T	No*			Comment#:	+	
	Sample Dilutions		No	1	Yes*			Comment#: 4	╛┌	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК		No*	✓ N/A	See	Analysis Below		Flags Applied
C 1 D 1 C										
Sample Receipt Summary	NONE NOTED									
Case Narrative Comments:	DEVIEWED AND INCLUDED DETAIL	LEE	CLD		4 D.F					
	REVIEWED AND INCLUDES DETAIL	LED	SUN	1M.	ARIE	S OF HOL	LD TIMES, 0	QC ISSUES,		
AND CONFORMANCE.										
Review of field notes (note ar	ny deviations from work plan or other anomal	ies t	hat m	ay l	bias d	lata):				
SAMPLES WERE FAIRLY T				•		,				
7998001000000000000000000000000000000000										
Field Duplicate Analyis:	NOT APPLICABLE									_

QC Item	<u>Comments</u>
1	Toluene was reported in the trip blank at a low concentration above MDL but below RL. It is qualified with a "J."
	Toluene was not detected in any other samples. No additional qualification required.
2	2-Chloroethyl vinyl ether had a low recovery for the Lab Control Spike. Data qualifications apply.
	See Data Qualifications Table below.
3	MS/MSD Failures were noted for the following analyses.
	8260B, 8270D, 8081B abd TOC:
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
4	Metals analysis for CC-3 required 2x dilution, reporting limits reflect the dilution.
-	
-	

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Data Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
PW-1	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
PW-2	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
PW-3	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
PW-4	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
Trip Blank	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI						***************************************			
Semple Delivery Group:	FA8881	-								
ysis Method:	8260B	-	Ma	trix	. [✓ Water	✓ Soil	Other		
Sample Locations in Batch:		-		•••	•				_	
Sumple Bocations in Datein		- 01	0.2.1	<i>5</i> C	110.2	2 010 2 5	010 6 2 01	10.2.10		
	S18-6-15, S18-6-10, S18-2-INT, S18-6-5	, 81	8-2-1	3, 8	18-2-	2, \$18-2-5	, S18-6-2, S1	18-2-10		
		_						-		
Split Samples DUP-1	112 (S18-2-5)									
Quality Control Samples As	ssociated With Batch Field:	DU	JP-11	3 (8	318-2)	, TB				
*	Lab:	MI	ETHO	DD I	BLAN	KS, LAB	SPIKES, MS	MSD, SURROGA	TES	
Reviewed by & Date:	Kfuller 11/1/13									
Quality Control	Requirements	_				CI			_	
Quanty Control	Requirements						ieck Comments)			Flags Applied (see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.					(strge	Comments)		+	(see comments)
			ок	Γ	ີ No*	☐ Not p	rovided	Comment#:		
	(Case Narrative/Conformance Summary,			_		пос р	Ovided	Comment.		
	Results, COC, QC Summaries) All samples on COC reported	+-	7 01	_	7			0 "		
Holding Times (HT)	Water		OK OK	+	No*			Comment#:	+	Floor Applicat
riolomg rimes (III)	Soil		_	十	No*			Comment#:	+	Flags Applied Flags Applied
Containers and Preservation		1			No*			Comment#:	╁	Flags Applied
Blanks (MB,TB,EB, FB/AB)									┿	
	Method Blank	4	No		Yes*	k	A	Comment#:		
	Trip Blank	4	No		Yes*	k	4	Comment#:		
	Equipment Blank		No		Yes*	* 🛂 N//	4	Comment#:		
(Blank Spike S)	LCS Data Provided	~	₹	L	No*				Ŭ₽.	✓ Flags Applied
MS/MSD	Acceptance criteria met	 -	OK		1			Comment#: 1		
1415/1415D	Matrix Spikes Provided Acceptance Limits:	~	٠٠٠	-	No*	None	<u> </u>	C	$\dashv \Gamma$	Flags Applied
Surrogate Recovery Summa		-	OK	- -	-	П.,		Comment#: 2	+-	
Surrogate Recovery Summa	ry Method surrogates used Recovery Limits:	-	-	上	No*	Not p	rovided	C	- [Flags Applied
Sample Evaluation	All hits within cal. Range	1		누	No*			Comment#:	-	
•	Sample Dilutions	1	-	十	Yes*	:		Comment#:	+L	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК	Ē	No*	□ N/A	See	Analysis Below	T	Flags Applied
	* * * * * * * * * * * * * * * * * * * *									
Sample Receipt Summary	No issues noted.									
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED :	SUM	MA	RIES	OF HOLD	TIMES, QC	ISSUES,		
AND CONFORMANCE.										
Review of field notes (note a)	ny deviations from work plan or other anomal	ies t	hat n	nay	bias c	lata):				
	p trouble for parameter collection (S17-1a, T1-1):						2)			
disafficient water now or puni	p trouble for parameter concerton (517-1a, 11-1).	110	w-um	ougi	i cen	icakeu (ST	5-2)			
Field Duplicate Analyis: DUP-112 = S18-2-5 = RPD ANALYSIS - MAX = 2% WHICH IS LESS THAN 40%										
	DUP-113 = S18-2 = RPD ANALYSIS - MAX =	30%	6 WH	IICH	I IS L	ESS THAI	N 40%			

QC Item			Comments						
1	LCS below limits for 2-Chloroethyl viny	l ether (T1-1, S1	8-2, S17-1a, DUP-113): qualified below						
2	MS/MSD failures were present. All were								
The laboratory case narrative provides detailed explanations of the compounds failing. Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision									
			ept where otherwise noted; therefore, acceptable precision						
	and accuracy are demonstrated by LCS (QC.							
		a							
Overall Data Asse	ssment for Group:								
The results presente	d in this data package have been validated in	accordance wit	th validation criteria presented in the EPA Functional Guidelines for Organic and						
	ves with the exceptions noted below, if any.	1999. Data is i	found to be representative and quantitative meeting the precision and accuracy of the						
data quanty objecti	ves with the exceptions noted below, it airy.								
		3							
Data Qualification									
Sample II	Analytes	Qualifier	Reason for Qualification						
T1-1	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result						
S18-2	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result						
S17-1a	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result						
DUP-113	2-Chloroethyl vinyl ether	R	LCS recovery low on ND result						

Project Name & Task: Clean Harbors-Wichita Phase IV RFI											
Semple Delivery Group:	FA 8882	_									
ysis Method: 8260B		-	Ma	trix	. [✓ Water	✓ Soi	I Other			
Sample Locations in Batch:	SOIL: S18-1-2, S18-1-5, S18-1-10, S18-	- 1-15	. S18	-1-I	NT.	S17-1-2, S	S17-1-5, S1	7-1-10, S17-1-15, S	17-1	-INT	
_	518-1, S17-1, DUP-109, DUP-111, TRIP BLANK		,		, -	-,, -	7,7,0,0,	, , , , , , , , , , , , , , , , , , , ,	1, 1	1111	
1100000.0	7.0 1, 517 1, Del 107, Del 111, 11th BE/111										
	LOO CDI IT WITTH CAO 1 15										
	108 - SPLIT WITH S18-1-15										
DUP-1	110 - SPLIT WITH S17-1-10							,			
Quality Control Samples As	ssociated With Batch Field:	BL	ANK					*			
	Lab:	ME	THO	DD I	BLA	NKS, LA	B SPIKES,	MS/MSD, SURRO)GA	TES	
Reviewed by & Date:	LISA HENNESSY 11/5/2013										
		_							_		
Quality Control	Requirements						Check				lags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	+				(* See Q	C Comment	s)	_	(9	see comments)
g ()	quarte desiration in page		Ок	_	٦						
	(Case Narrative/Conformance Summary,	-	JOK		_] INO.	* Not	provided	Comment#:			
	Results, COC, QC Summaries)										
	All samples on COC reported		ОК		No			Comment#:	_		
Holding Times (HT)	Water Soil	-		-	No ³			Comment#:	-	II.	Flags Applied
Containers and Preservation		-	OK OK	<u> </u>	No ³		1	Comment#:	1		· · · · · · · · · · · · · · · · · · ·
Blanks (MB,TB,EB, FB/AB)		1	JUK		INO	<u> </u>		Comment#:		╀┺	Flags Applied
	Method Blank	1	No		Yes	*	I/A	Comment#:		1	
_	Trip Blank	1			Yes	-	I/A	Comment#:			
	Equipment Blank	L	No		Yes	* 1	I/A	Comment#:			
(Blank Spike S)	LCS Data Provided	\ <u>\</u>		_	No ³					V	Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	-	OK				ъ	Comment#:	2		- ago r ppilou
1415/141515	Acceptance Limits:	H	OK OK	+	No ³		e*	Comment#:	3		Flags Applied
Surrogate Recovery Summa		7	ОК	F	No ³		provided	Comment.	3		
Surrogue Recovery Summa	Recovery Limits:	1	ОК	十	No		provided	Comment#:		ŀШ	Flags Applied
Sample Evaluation	All hits within cal. Range		ОК	1	_			Comment#:	4		
	Sample Dilutions		No	4	Yes	*		Comment#:	5		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ok	4	No	^k □ N/A	9	See Analysis Below			Flags Applied
Sample Receipt Summary	NONE NOTED										
Casa Namativa Comments	DEVIEWED AND INCLUDED DETAIL	TTT	CID		ADI	EC OF II					
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LEL	SUI	VIM	AKI	ES OF H	OLD TIME	S, QC ISSUES,			
AND CONFORMANCE.											
Review of field notes (note a	ny deviations from work plan or other anomal	ies t	hat n	nay	bias	data): No	ONE NOTE	ED .			
	-					,					
Field Duplicate Analyis:	DUP-109=S18-1 MAX RPD=18%	DU	P111	=S1	7-1 1	MAX RP	D=8%				
	-RPD<40%; THEREFORE ACCEPTABLE A	ND	NO.	ADI	DITI	ONAL A	CTION RI	EQUIRED			
				_							

QC Item	<u>Comments</u>
2	LCS failures as noted:
	2-chloroethyl vinyl ether - recovery low - flag associated data - see below
	-spike QC for metals is acceptable
3	MS/MSD failures as noted:
	MS/MSD Soil had low recovery for multiple compounds.
	MS/MSD Aqueous: Acetone - recovery low, Bromoform - recovery low, 2-chloroethyl vinyl ether,
	1,1-DCE - recovery high, 2-Hexane, Styrene
	All aqueous samples except the trip blank had low level detections already qualified with a "J" No action required
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
4	PCE was E flagged by lab as out of calibration range in sample S18-1, S17-1, DUP-109, DUP-111. Lab has flagged.
	No additional action required.
5	For samples: S18-1-5, S18-1-10, S18-1-15, S18-1-INT, S17-1-2, S17-1-5 - metal required dilution - reporting limits
	reflect action. No additional action required.
1	Samples were received within recommended hold times but not processed timely by the laboratory

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Sample ID	Analytes	Qualifier	Reason for Qualification
S18-1	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
S17-1	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
DUP-109	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
DUP-111	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
ТВ	2-chloroethyl vinyl ether	R	Low recovery of compound in the laboratory control spike.
Dup-108	Detected VOCs	ī	Exceeded hold time
DUP-110	Non-detected VOCs	UJ	Executed fixed time

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Semple Delivery Group:	FA8885										
ysis Method:	8260B, 8270D, 8015C, metals, TOC	•	Mat	rix:	√	Water	✓ Soil	Other			
Sample Locations in Batch:											
•	S10-1-0.5, S10-1-2, S10-1-10, S10-1-15,										
		510									
	\$10-1-5, \$20-1-2, \$20-1-5					**************************************					
Split Samples DUP-1	007 (S10-1-W1)										
Quality Control Samples As	sociated With Batch Field:	DU	P-10	06 (S10-1), TB					
	Lab:	MF	ЕТНО	DΒ	BLAN	KS, LAB S	SPIKES, M	IS/MSD, SURROG	ATI	ES	
Reviewed by & Date:	Kfuller 11/6/13										
Quality Control	Requirements			_		Ch	eck		_]	Flags Applied
							Comments)				(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.										190
	(Comp. Normation / Comp. Comp. Comp.	~	ok]		No*	☐ Not pr	ovided	Comment#:			
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)									ĺ	
	All samples on COC reported	Г	ОК	1	No*			Comment#:	1		
Holding Times (HT)	Water	1	ОК		No*	N/A		Comment#:		L	Flags Applied
	Soil	1	ОК		No*	N/A				L	Flags Applied
Containers and Preservation		1	OK		No*			Comment#:		上	Flags Applied
Blanks (MB,TB,EB, FB/AB)		_		_							
	Method Blank	~	1	_	Yes*	TAXABLE PARTY OF THE PARTY OF T		Comment#:	2		
	Trip Blank Equipment Blank	⊬	No	✓	1			Comment#:	3		
(Blank Spike S)	LCS Data Provided	1	No OK	+	Yes*	✓ N/A		Comment#:	\dashv	_	
(Simmispines)	Acceptance criteria met	Ħ	ОК	7	No*			Comment#:	4	L	Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК	T	No*	None*	:			_	1
	Acceptance Limits:		ОК	~	No*			Comment#:	5	L	Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	~	ОК		No*	☐ Not pr	ovided			$\overline{}$	Flags Applied
	Recovery Limits:	1	OK		No*			Comment#:		L] Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	Ļ	No*			Comment#:		Г	Flags Applied
	Sample Dilutions	Ļ	No	_	Yes*			Comment#:	6	Ë	
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK		No*	∐ N/A	Se	ee Analysis Below		<u>_</u>	Flags Applied
Sample Receipt Summary	No issues noted.										
Sample Receipt Summary	No issues noted.										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED S	SUMI	MA	RIES (OF HOLD	TIMES, C	OC ISSUES.			
AND CONFORMANCE.											
THE COLL CLAME (CD.											
Daviera of Galdanata (autore							-				
Review of field notes (note a)	ny deviations from work plan or other anomal	ies t	hat m	ay	bias d	ata):	•			_	
No issues noted.	No issues noted.										
Field Duplicate Analyis:	SPLIT DUP-1007 = S10-1-WT = RPD ANALY	SIS ·	- MA	X =	70% V	WHICH IS	MORE T	HAN 40%			
	VALYSIS - MAX = 8% WHICH IS LESS THAN								-	_	

QC Item	Comments									
2	Method Blank detection of Methylene chloride (8.2J) for S10-1-0.5, S10-1-2, S10-1-10, S10-1-15, S10-1-WT, TB									
3	Trip Blank detection of Methylene Chloride (8.5J, below RL)									
4	4 LCS recoveries were above the limits for acetone									
5										
	-			ons of the compounds failing.						
		or LCS met criteria for failed or grant country are demonstrated by LCS (ept where otherwise noted; therefore, acceptable precision						
6	Sample dilu	utions up to 10								
1	Samples we	ere collected in the field for fu	ıture analysis if	required and held at the lab.						
	Analysis of	any held samples are reporte	d separately.	•						
		52								
Overall Data Assess	ment for Gr	oup:								
				th validation criteria presented in the EPA Functional Guidelines for Organic and						
		9240.1-05A-P) dated October ceptions noted below, if any.	r 1999. Data is f	found to be representative and quantitative meeting the precision and accuracy of the						
data quanty objective	s with the ex	ecptions noted below, if unly.								
8										
Data Qualifications	_		•							
Sample ID		Analytes	Qualifier	Reason for Qualification						
None		•	-	No additional action required						
			l							

Project Name & Task: Cle	an Harbors-Wichita Phase IV RFI										
Semple Delivery Group: FA	8886	-									
	5 (DRO), Metals, TOC	-	Mat	friv	. Г	✓ Water	✓ Soil	Other			
		-	Ma	LIIA							
Sample Locations in Batch:	AQUEOUS: NBJ-1, T3-2										
SOIL: NBJ-1-0.5,	NBJ-1-2, NBJ-1-5, NBJ-1-10, NBJ-1-15, N	BJ-1	-WT	, S1	4-5-0	.5, S14-5-2	2, S14-5-5				
Split Samples DUP-1009	split with NBJ-1-15										
Quality Control Samples Associ	ated With Batch Field:	DL	JP-10	08,	DUP	-1010					
	Lab:	MF	THO	DD I	BLAN	NKS. LAB	SPIKES, M	S/MSD, SURRO	GA'	TES	
Reviewed by & Date: Lisa	Hennessy 11-5-13					,					
									_		
Quality Control	Requirements						ieck				Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	+-				(* See QC	Comments)			((see comments)
Data 1 kg Complete (D1)	An required deriverables in pkg.		ا مر	_	٦						
	(Case Narrative/Conformance Summary,	4	OK	L	_ No*	∐ Not p	rovided	Comment#:			
	Results, COC, QC Summaries)										
	All samples on COC reported	~	OIL		No*			Comment#:	1		
Holding Times (HT)	Water Soil	-		-	No*	= -		Comment#:		Ļ	Flags Applied
Containers and Preservations	Containers and perservation compliant	1	OK OK	<u> </u>	No*			Comment#:	2	ľ	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)	1	UK		INU			сопшенен.		-	_ riags Applied
	Method Blank	~	No		Yes	* N//	Α	Comment#:			
	Trip Blank	~			Yes			Comment#:			
	Equipment Blank	₩.	No	+	Yes		Α	Comment#:		_	
(Blank Spike S)	LCS Data Provided Acceptance criteria met	4	OK OK	1	No*			Comment#:	3		Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК	Ť	No*		*	сопписии.	3	_	
	Acceptance Limits:		ОК	~	_			Comment#:	4	L	Flags Applied
Surrogate Recovery Summary	Method surrogates used	~	ОК		No*	☐ Not p	rovided			Г	Flags Applied
	Recovery Limits:	✓	OK	L	No*			Comment#:		L	
Sample Evaluation	All hits within cal. Range	'	OK	_	No*			Comment#:			Flags Applied
Field Dunlingto (FD)	Sample Dilutions Precision of native vs field duplicate(s)	╁	No OK	<u> </u>	Yes No*		C	Comment#:	5	Г	Tipes Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		JOK] 140.	N/A	Sec	e Analysis Below			Flags Applied
Sample Receipt Summary	NO ISSUES NOTED										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LEI	SU	MM	[ARI]	ES OF HO	LD TIMES,	QC ISSUES,			
AND CONFORMANCE.											
Review of field notes (note any d	eviations from work plan or other anomal	lies t	hat n	nav	hias	data): NO	NE NOTEL)			
review of field flotes (flote any d	eviations from work plan of other anomal	iles t	mat n	uay	Dias	uata). 140	TENOTEL				
Field Duplicate Analyis: DUP-1008=NBJ-1 Max RPD=8% DUP-1010=T3-2 max RPD=11%											
DUP-1009/NBJ-1-15 Split - All ND so RPD not calculated.											
D DUPLICATE PRECISIO	N IS EVALUATED AGAINST A MAXIN	иUN	1 AL	LO	WAB	LE RPD (OF 40%.				
PRECISION OF THIS ANALYS											
					1000 0000						

QC Item	<u>Comments</u>
3	LCS recoveries were above the limits for Acetone.
	Associated samples were ND. No additional action required.
4	MS/MSD failures were present. All were evaluated.
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
5	Sample dilution were required for VOC and metals analysis. Where diluted, the laboratory has provided
	elevated reporting limits and flags to denote the dilution. No additional qualification is required.
2	Samples were received within recommended hold times but not processed timely by the laboratory
	and inadvertently missed being analyzed within the method required time. See Data Qualification Table below.
1	Samples were collected in the field for future analysis if required and held at the lab.
	Analysis of any held samples are reported separately.
	sessment for Group:
	nted in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines
	Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting a laccuracy of the data quality objectives with the exceptions noted below, if any.
the precision and	i accuracy of the data quality objectives with the exceptions hoted below, if any.

Data Qualifications

Sample ID	Analytes	Qualifier	Reason for Qualification
NBJ-1-0.5	Detected VOCs Non-detected VOCs		
NBJ-1-2			
NBJ-1-5		J	Analyzed outside hold time.
NBJ-1-10		UJ	Analyzed outside fiold finite.
NBJ-1-15			
NBJ-1-WT			

Project Name & Task: (Clean Harbors-Wichita Phase IV RFI								,		
l ' -	FA 8887	-									
	SVOCs, METALS	-	Mat	riv.	. 🔽	Water	✓ Soil	Other			
		-	Mai	111.		_					
Sample Locations in Batch:											
SOIL: S14-4-15	5, S14-4-2, S14-4-10, S14-4-WT, S14-4-0.5, S1	4-4-:	5, TB	-13							
Split Samples NONE											
											2
Quality Control Samples Asso	ociated With Batch Field:	TR	IP BL	AN	ΙK						
	Lab:	M	ETHO	DD I	BLAN	IKS, LAB	SPIKES, MS	S/MSD, SURRO	GAT	ES	
Reviewed by & Date: I	LISA HENNESSY 11/6/2013						a de la composición della comp				
		_				~					
Quality Control	Requirements				(eck Comments)			1	Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	-				- See QC	Comments)			(s	see comments)
- www ring complete (227)	m required desired an ping.	[₇	ОК		ا ا	□ Notes					
	(Case Narrative/Conformance Summary,	-	JOK	L] No*	Not pr	ovided	Comment#:			
	Results, COC, QC Summaries)										
	All samples on COC reported		ОК	1	No*			Comment#:	1		
Holding Times (HT)	Water	1	ОК	_	No*	N/A		Comment#:		L	Flags Applied
Containers and Preservations	Soil	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	10.1	+	No*	N/A		C		╠	Flags Applied
Blanks (MB,TB,EB, FB/AB)	Containers and preservation compliant Detects (> MDL or RL)	1	OK		No*			Comment#:			Flags Applied
planks (MD, 1D, LD, 1D/AD)	Method Blank	1	No	Т	Yes*	□ N/A		Comment#:			
	Trip Blank		No	T	Yes*			Comment#:			
	Equipment Blank		No		Yes*			Comment#:			
(Blank Spike S)	LCS Data Provided	1	ОК		No*						Flags Applied
MOREO	Acceptance criteria met	4	OK	✓	1			Comment#:	2	느	
MS/MSD	Matrix Spikes Provided Acceptance Limits:	1	OK	-	No*	None ³		C	3		Flags Applied
C C		-	ok ok	÷	No*			Comment#:	3		
Surrogate Recovery Summary	Method surrogates used Recovery Limits:	⊬	OK	-		Not pr	rovided	Comment#:	4		Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	Ť	No*			Comment#:	4		
•	Sample Dilutions		No	1	-			Comment#:	5	L	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК		No*	✓ N/A	See	Analysis Below			Flags Applied
2	· · · · · · · · · · · · · · · · · · ·										
Sample Receipt Summary	NOTHING NOTED										
							*				
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED S	SUM	MA	RIES	OF HOLD	TIMES, QC	C ISSUES,			
AND CONFORMANCE.											
Review of field notes (note any	y deviations from work plan or other anomal	ies t	hat n	ow	hias d	lata): NOT	THING NOT	ED			
review of field notes (note an	y deviations from work plan of other anomal	ics t	пас п	lay	DIAS U	iata). NO	IIINO NOI	ED			
				-							
							·				
Field Duplicate Analyis: N	NOT APPLICABLE										

QC Item				Comments	
1	Sample	s were collected in the field for f	uture analysis if	required and held at the lab.	
	Analys	is of any held samples are reported	ed separately.		
2	LCS is	acceptable with the following ex	ception:		
				is ND for Acetone. No additional qualification required.	
				fected sample S14-4 & is reported as ND for this compound.	
<u> </u>		additional qualification required		•	
				the spike and recovery was outside QC limits. All data is	
		by labNo additional qualificat			
3	MS/MS	SD failures were present. All we	re evaluated.		
	The lab	oratory case narrative provides d	etailed explanati	ons of the compounds failing.	
	Analys	es for LCS met criteria for failed	compounds, exc	ept where otherwise noted; therefore, acceptable precision	
	and acc	curacy are demonstrated by LCS	QC.		
	38 failu	ares were observed in the MS/MS	SD for sample S1	4-4-5 - the matrix was a non-CH sample.	
4	Surroga	ate recoveries were outside limits	for the confirma	tion run on sample S14-4-0.5, Sample was quanitified	
	using r	uns with acceptable recoveries. N	lo additional qua	lification required.	
5	Dilutio	ns were required for the followin	g samples:		
	Met	als - S14-4-2 - reporting limit has	s been modified a	and is acceptable	
	Pb -	S14-4-0.5 - 5x dilution - reporti	ng limit has been	modified and is acceptable	
	No add	itional action required.			
-					
Inorganic Data R	nted in this da	ata package have been validated i	r 1999. Data is	th validation criteria presented in the EPA Functional Guidelines for Organic and found to be representative and quantitative meeting the precision and accuracy of the	
Chromiu	ım had high F	RPD, Pb had high RPD. (Accepta	able due to low sa	ample concentrations. No additional action required)	
Data Qualificati	ons		·		
Sample	ID	Analytes	Qualifier	Reason for Qualification	
None	None No additional Action Required				

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI							
Semple Delivery Group:	FA8909							
ysis Method:	8260B, 8270D, 8081B, metals, 9060A	— М	latr	ix:	✓ Water	✓ Soil	Other	
Sample Locations in Batch:	PW-5, PW-6	_						
,	CC-5, CC-6							

		2						
Split Samples								
							*	
Quality Control Samples Ass	sociated With Batch Field:							
	Lab: METHOD BL.	ANKS,	LA	BS	PIKES, MS/MS	SD, SURRO	GATES	
Reviewed by & Date:	Kfuller 11/4/13							4
Quality Control	Requirements	T			Ch	eck		Flags Applied
Canaly 2011101	2. Coquito monto				(* See QC			(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.							
		 ✓ 0	K		No* Not pr	ovided	Comment#:	
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)							
	All samples on COC reported	V 0	r	П	No*		Comment#:	
Holding Times (HT)	Water	70		Н	No* N/A		Comment#:	Flags Applied
	Soil	√ 0			No* N/A			Flags Applied
Containers and Preservation		√ 0	K		No*		Comment#:	Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL) Method Blank	Lalar		\Box	v * ¬			
	Trip Blank	✓ No		H	Yes* N/A Yes* ✓ N/A		Comment#: 1	_
	Equipment Blank	No	-	H	Yes* ✓ N/A		Comment#:	
(Blank Spike S)	LCS Data Provided	✓ O			No*			
1500500	Acceptance criteria met	OI			No*		Comment#: 2	✓ Flags Applied
MS/MSD	Matrix Spikes Provided Acceptance Limits:	 √ 0	-	$\overline{}$	No* None*		G	Flags Applied
Surrogate Recovery Summai		<u> </u>	_	=	No*		Comment#: 3	
Surrogate Recovery Summar	Method surrogates used Recovery Limits:	<u> </u>		=	No* Not pr	ovided	Comment#:	Flags Applied
Sample Evaluation	All hits within cal. Range	1/0		=	No*		Comment#:	
	Sample Dilutions	□ No)	_	Yes*		Comment#: 4	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		<		No* ✓ N/A	See	Analysis Below	Flags Applied
Sample Receipt Summary	No issues noted.							
Casa Namativa Cammanta	DEVIEWED AND BIGHT IDEA DETAIL	ED CLU		n	TEG OF HOLD	TD (D) 0.0		
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LED SU	MM	LAK	TES OF HOLD	TIMES, QC	SISSUES,	
AND CONFORMANCE.								
Review of field notes (note an	y deviations from work plan or other anomal	lies that	ma	ıy b	ias data):			
No issues noted.								
								
Eigld Daniel A. 1.	N-4P-11-							
Field Duplicate Analyis:	Not applicable							

QC Item			Comments
2 LCS	helow limits for: 4-Nitrophenol, 4-F	Bromophenyl ph	enyl ether, 3,3'-Dichlorobenzidine (CC-5) - qualified below
	recoveries were above the limits		(****)
	Associated samples were ND.	No additiona	l action required.
3 MS/N	MSD failures were present. All were	e evaluated.	
The l	aboratory case narrative provides de	tailed explanati	ons of the compounds failing.
Analy	yses for LCS met criteria for failed c	compounds, exc	ept where otherwise noted; therefore, acceptable precision
and a	ccuracy are demonstrated by LCS Q	C.	
4 Samp	ole dilutions up to 5		
1 <u>No tr</u>	ip blanks provided or analyzed.		
Overall Data Assessment f	or Group:		
The results presented in this	data package have been validated in	accordance wi	th validation criteria presented in the EPA Functional Guidelines for Organic and Found to be representative and quantitative meeting the precision and accuracy of the
	the exceptions noted below, if any.	1999. Data is i	ound to be representative and quantitative incerting the precision and accuracy of the
Data Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
CC-5	4-Nitrophenol,	R	LCS below limits
CC-5	4-Bromophenyl phenyl ether,	R	LCS below limits
CC-5	3,3'-Dichlorobenzidine	R	LCS below limits

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	FA 8921										
ysis Method: 8260B	; METALS, 8270D	•	Mat	rix:	. [Water	✓ Soil	Other			
Sample Locations in Batch:		10				2-15			-		Edit di sulla sulla successiva di successiva di successiva di sulla sull
Sample Escations in Batter.							IT C24 2 5				
	\$24-2-INT, \$18-5-5, \$14-1-2, \$13-3-10,	313.	-3-10,	, 31	3-3-1.	3, 316-3-II	11, 524-2-3				
	AQUEOUS: S18-5, S24-2, S24-3										
Split Samples NONE											
<u> </u>											
Quality Control Samples As	sociated With Batch Field:	TR	IP BL	AN	JK						
	Lab:	ME	THC	D I	BLAN	IKS, LAB	SPIKES, MS	S/MSD, SURROG	AT	ES	
Reviewed by & Date:	Lisa Hennessy 11/8/2013										
		_							_		
Quality Control	Requirements						eck				gs Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	-				(* See QC	Comments)		+	(see	e comments)
Jun 1 ng Comprete (D1)	Tim required denvertiers in page	 	ОК	_	ا الم			G			
	(Case Narrative/Conformance Summary,	4	JOK	L	_ No↑	Not pr	ovided	Comment#:			
	Results, COC, QC Summaries)		_		_						
	All samples on COC reported	4	ОК	1	No*			Comment#: 1	\perp		
Holding Times (HT)	Water Soil	~	OK	Ļ,	No*	N/A		Comment#:	4		lags Applied
Containers and Preservation		1	OK OK	4	No*	∐ N/A		Comment#:	+		lags Applied lags Applied
Blanks (MB,TB,EB, FB/AB)		-	JOK		INO			Comment#.	+	<u> </u>	lags Applied
	Method Blank	1	No		Yes*	N/A		Comment#:	-		
	Trip Blank	~	i -	Ē	Yes*			Comment#:			
	Equipment Blank		No		Yes*			Comment#:			
(Blank Spike S)	LCS Data Provided	✓	ОК	L	No*					ПЕ	lags Applied
MCAICD	Acceptance criteria met	4	OK	✓	1			Comment#: 2	\perp		iago rippiica
MS/MSD	Matrix Spikes Provided Acceptance Limits:	<u> </u>	OK OK	1	No*	None ³	•	Comment#: 3	\dashv	F	lags Applied
Surrogate Recovery Summa		-	ok	÷	No*	✓ Not p	ovidod	Comment#. 3	+		
Surrogate Recovery Summa	Recovery Limits:	-	OK	十	No*	_ INOL PI	ovided	Comment#:	\dashv	F	lags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	T	No*	***************************************		Comment#:	+	$\overline{}$	
•	Sample Dilutions	1	No		Yes*	:		Comment#:		∐F	lags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК		No*	✓ N/A	See	Analysis Below		F	lags Applied
Sample Receipt Summary	HOLD TIMES MISSED FOR VOC SAI	MPI	LES A	SSC	OCIA	TED WIT	H S18 AND	S24 SOILS. DISC	AF	DV	OC
DATA. NO OTHER ISSUES	5										
							E.				
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LED	SUN	ИΜ	ARIE	S OF HO	LD TIMES,	QC ISSUES,			
AND CONFORMANCE.						,					
Review of field notes (note a)	ny deviations from work plan or other anomal	ies t	hat n	iav	bias c	lata):					
(,						-	
											-
Field Duplicate Analyis:	NOT APPLICABLE										
									_		

QC Item			Comments					
1 Soil sa	amples S24-2-10, S24-2-15, S18-5	5-5, S24-2-INT,	S18-5-INT, and S24-2-5 are out of hould					
Da	Data was rejected and not reported. Location resampled for VOCS and validated under 9049 & 9055							
2 LCS d	ata for soil samples are accepta	ıble.						
LCS d	ata for aqueous samples has hi	gh recovery fo	r Acetone.					
A	ll associated samples are N.D. s	so no additiona	al action required.					
3 MS/N	/ISD recoveries/RPDS outside (QC limits as fo	llows:					
For Sa	mples S14-1-2, S13-3-10, S13-3-	15						
VOCS	S: Low recovery: 1,1-DCE & hex	achlorobutadi	ene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene					
For Sa	amples S18-5, S24-3, and S24-2							
No	recovery for 2-chloroethyl viny	yl ether						
Lo	w recovery for trans-1,3-dichlor	ropropene, Sty	rene, 1,3,5-trimethylbenzene					
	l laboratory spike data is accep	table so no ado	ditional action required					
SVOC	: Sample S14-1-2 - low recovery	y on RPD excee	edences for 4,6-dinitro-o-cresol, 2-methylphenol,					
bis	(2-chloroethyl)ether, hexachlor	ocyclopentadie	ene					
Metal	s: most metals did not show go	od precision &	accuracy - all LCS is OK; therefore, no additional action					
rec	uired							
Overall Data Assessment	-							
			lance with validation criteria presented in the EPA Functional Guidelines					
	of the data quality objectives v		ctober 1999. Data is found to be representative and quantitative meeting ions noted below, if any.					
Data Qualifications								
Sample ID	Analytes	Analytes Qualifier Reason for Qualification						

_	•	_
2	ot	2

No additional action required

None

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI								
Semple Delivery Group:	FA 8922	-							
	lysis Method: 8260B-VOLATILES, 8270D-SEMIVOLATILES,		Mat	riv•	. [-	Water	✓ Soil	Other	
Sample Locations in Batch:		- - C							214.1.0.5
1 -		3, 8	13-3-3	, 5	13-3-2	2, 813-3-0.	5, 813-3-2,	813-3-0.5, 813-3-2, 8	814-1-0.5
AQUEOUS:	\$13-3								
Split Samples NONE									
Ovality Control Complex As	posioted With Dotah Field.	TD	IP BL	4 N	IV TI	2 10			
Quality Control Samples Ass		_		_				2/2/2000 000000000	
	Lab:	ME	THC	DD E	3LAN	IKS, LAB	SPIKES, M	S/MSD, SURROGA	ATES
Reviewed by & Date:	KATE FULLER 11/6/2013								
Quality Control	Requirements	$\overline{}$				Ch	eck		Flags Applied
Quanty control	Requirements						Comments)		(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.					(=== €=			(see comments)
		~	Ок	Г	No∗	☐ Not pr	rovided	Comment#:	
	(Case Narrative/Conformance Summary,			_	_ 110	поср	ovided	Comment#.	
	Results, COC, QC Summaries)	<u> </u>	,	_	_				
Holding Times (HT)	All samples on COC reported Water	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		+	No*			Comment#:	
filling Times (111)	Soil	<u> </u>	OK OK	1	No*	N/A N/A		Comment#: 1	☐ Flags Applied ☐ Flags Applied
Containers and Preservation	37.00	1	_	Ť	No*			Comment#:	Flags Applied
Blanks (MB,TB,EB, FB/AB)			JOIL		1110				Tidgs / ppiled
*	Method Blank	~	No		Yes*	N/A	١	Comment#:	
	Trip Blank		No		Yes*			Comment#:	
(Dlank Calles C)	Equipment Blank	 	No	+	Yes*	'	١	Comment#:	
(Blank Spike S)	LCS Data Provided Acceptance criteria met	-	OK OK	┝	No*			Commont#. 2	Flags Applied
MS/MSD	Matrix Spikes Provided	+	OK	Ť	No*	None ³	*	Comment#: 2	
	Acceptance Limits:		ОК	1	No*			Comment#: 3	Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	V	ОК	Ī	No*	□ Not p	rovided		
	Recovery Limits:	V	ОК		No*			Comment#:	Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК		No*			Comment#:	Flags Applied
	Sample Dilutions	Ļ	No	4				Comment#:	
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK	L	No*	✓ N/A	See	e Analysis Below	Flags Applied
Sample Receipt Summary	NO ICCLIEC MOTED								
Sample Receipt Summary	NO ISSUES NOTED						-		
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	IEI	SIIN	м	ARIE	S OF HO	I D TIMES	OC ICCI IEC	
	KEVIEWED AND INCEEDES DETAIL	LLL	301	VIIVI	ANIL	.5 OF 110	LD TIMES,	QC 1550E5,	
AND CONFORMANCE.									
Review of field notes (note ar	ny deviations from work plan or other anomal	ies t	hat m	ay	bias d	lata): NO	NE NOTED)	
				-					
THE HOLD III	NOT INDICATE A								4
Field Duplicate Analyis:	NOT APPLICABLE								

QC Item	<u>Comments</u>										
11	The laboratory did not notify Cameron-Cole that Sample S24-3-INT was received out of hold.										
	This sample was analyzed. Results will be qualified.										
2	LCS above limit for: Acetone - associated samples were non-detect; therefore, no additional action required.										
3	MS/MSD failures were present. All were evaluated.										
3											
	The laboratory case narrative provides detailed explanations of the compounds failing.										
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision										
	and accuracy are demonstrated by LCS QC.										
4	Some metals required dilutions due to matrix interference. Details are provided in										
	case narrative. All diluted samples have elevated reporting limits to reflect the dilution.										
	No additional action required.										
-											
Overall Data As	ssessment for Group:										
	ented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines										
	Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting										
the precision an	d accuracy of the data quality objectives with the exceptions noted below, if any.										

D .	•	1.6.	
I Jata	()1112	lifications	

Sample ID	Analytes	Qualifier	Reason for Qualification
S24-3-INT	Detected VOCs	J	Samples were analyzed outside of hold times.
324-3-IIVI	Non-detected VOCs	UJ	Samples were analyzed outside of hold times.

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI		
Semple Delivery Group:	FA8922R	_	
	D-SEM-IVOLATILES		
	SOIL: S13-3-5, S14-1-5	_	
Sample Docations in Daten.			
	AQUEOUS: NONE		
Split Samples NONE	<u> </u>		
Quality Control Samples As	ssociated With Batch Field:	NONE	
	Lab:	METHOD BLANKS, LAB SPIKES, MS/MSD, SURROG	ATES
Reviewed by & Date:	Lisa Hennessy 11/7/2013		
On all to Control	D		
Quality Control	Requirements	Check (* See QC Comments)	Flags Applied (see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.	(See QC Comments)	(see comments)
	1 0	✓ OK No* Not provided Comment#:	
	(Case Narrative/Conformance Summary,	No* Not provided Comment#:	
	Results, COC, QC Summaries)		
H.H. T. (HT)	All samples on COC reported		1
Holding Times (HT)	Water Soil	OK No* V N/A Comment#:	Flags Applied
Containers and Preservatio		✓ OK No* N/A ✓ OK No* Comment#:	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB	<u> </u>	V OR NO COMMONT.	rags Applied
	Method Blank	✓ No Yes* N/A Comment#:	
	Trip Blank		2
	Equipment Blank	No Yes* ✓ N/A Comment#:	
(Blank Spike S)	LCS Data Provided	✓ OK No*	Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	✓ OK No* Comment#:	Пидетфина
MS/MSD	Acceptance Limits:	OK No* None* OK V No* Comment#:	Flags Applied
Surrogate Recovery Summa		✓ OK No* Not provided	
Surrogate Recovery Summa	Recovery Limits:	✓ OK No* Comment#:	
Sample Evaluation	All hits within cal. Range	V OK No* Comment#:	
	Sample Dilutions	✓ No Yes* Comment#:	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	OK No* N/A See Analysis Below	Flags Applied
Sample Receipt Summary	SAMPLE ORIGINALLY HELD. A REC	QUEST TO RUN SAMPLE WITHIN HOLD TIME WAS	
SUBMITTED TO THE LAB			
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LED SUMMARIES OF HOLD TIMES, QC ISSUES,	
AND CONFORMANCE.			
Review of field notes (note a	ny deviations from work plan or other anoma	alies that may bias data): NOTHING NOTED	
neview of field notes (note a	my deviations from work plan of other anoma	nies that may bias data). No ITHNO NOTED	
Field Duplicate Analyis:	NOT APPLICABLE		

QC Item	<u>Comments</u>
1	Samples were collected in the field for future analysis if required and held at the lab. The results for this report
	are for a subsequent analysisr equested on 11/4/2013 - holding times met.
-	
3	MS/MSD failures were present in approximately 15% of the samples. All were evaluated.
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
2	Trip blank was associated with the parent sample delivery group FA 8922 and is validated under that group
-	
Overall Data Assass	cont for Crouns
Overall Data Assessing The results presented	n this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and
Inorganic Data Review	(OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the
data quality objective	with the exceptions noted below, if any.
Data On life of one	
Data Qualifications	Analytes Qualifier Reason for Qualification
Sample ID	
None	No additional action required

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	FA8923										
vsis Method:		-	Mat	riv•	1	Water	✓ Soil	Other			
	SOIL: S1-1-0-0.5, S1-1-2, S1-1-5', S1-1-	- 10! (O/T				_	
Sample Locations in Batch:		10,	31-1-	13,	31-1-	W I					
AQUEOUS: S	S1-1, DUP-1012, S18-4, DUP-1011										
Split Samples NONE	B										
Quality Control Samples As	ssociated With Batch Field:	TR	IP BL	AN	K, DI	JP-1012,	DUP-1011				
	Lab:							S/MSD, SURRO	GAT	FS	
Reviewed by & Date:	Lisa Hennessy 11/7/2013	141	DIIIC	10 1	JE II	IKO, LI IL	of Inclo, ivi	5/WISD, SCICKO	JAI	Lo	
										_	
Quality Control	Requirements						heck				Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	+-				(* See QC	Comments)			_((see comments)
Data 1 kg Complete (D1)	An required deriverables in pkg.	-	1	_	1		a or 200				
	(Case Narrative/Conformance Summary,		OK	L] No*	☐ Not p	provided	Comment#:			
	Results, COC, QC Summaries)										
	All samples on COC reported		ОК	~	No*			Comment#:	1		
Holding Times (HT)	Water	1	ОК	L	No*	N/A		Comment#:		L	Flags Applied
Cartina ID	Soil	+	OK	1	1	N/A			2	+	Flags Applied
Containers and Preservation Blanks (MB,TB,EB, FB/AB		<u> </u>	OK		No*			Comment#:		ᆫ	Flags Applied
Dialiks (MID, I D, ED, FD/AD)	Method Blank	17	No	$\overline{}$	Yes*	□ N/	'A	Comment#:		1	
	Trip Blank		No	十	Yes*			Comment#:			
	Equipment Blank	H	No	十	Yes*			Comment#:			
(Blank Spike S)	LCS Data Provided	1	ОК		No*			Comment			7
	Acceptance criteria met		ОК	1	No*			Comment#:	3	Ľ	Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК		No*	None	*			Г	Televa Assetsed
	Acceptance Limits:	<u> </u>	OK	√	No*			Comment#:	4		Flags Applied
Surrogate Recovery Summa	Method surrogates used	✓	ОК		No*	☐ Not p	orovided			Г	Flags Applied
	Recovery Limits:	1	ОК	L	No*			Comment#:		_	
Sample Evaluation	All hits within cal. Range	~	ОК	L	No*			Comment#:		Г	Flags Applied
Less Nove No. 102 2 2020 20	Sample Dilutions	 	No	V	Yes*			Comment#:	5	÷	_
Field Duplicate (FD)	Precision of native vs field duplicate(s)	✓	OK	L	No*	∐ N/A	See	Analysis Below		<u>_</u>	Flags Applied
Comple Descint Comment	CAMDI EC C10 4 2 C10 4 5 C10 4 10	C10	1 15	C10	4 337	T C10 4	20 25 WEDE	OUT OF HOLD	FOI		
Sample Receipt Summary	SAMPLES S18-4-2, S18-4-5, S18-4-10,	518-	4-15,	518	-4-W	1, \$18-4-	20-25 WERE	OUT OF HOLD	FOI	(V	OCS.
VOCS WERE RESAMPLED	AND VALIDATED UNDER FA9146										
Casa Namatina Cammanta	DEVIEWED AND INCLUDES DETAIL	ED (orn o	. f A 1	DIEC.	OF HOLE		NIGOLIEG			
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED S	SUMI	MA.	RIES	OF HOLI	D TIMES, QC	ISSUES,		_	
AND CONFORMANCE.											
Review of field notes (note a	ny deviations from work plan or other anoma	lies t	hat m	ay	bias d	ata): NO	NE NOTED				
Field Duplicate Analyis:	DUP-1012=S1-1 DUP-1011=S1	Q 1			-						
LICIO Duplicate Alialyis:				***	1001						
	RPD ANALYSIS - MAX = 15% WHICH										
FIELD DUPLICATE	PRECISION IS EVALUATED AGAINST A M.	4XIN	MUM	AL	LOW.	ABLE RI	PD OF 40%.				
PRECISION OF THIS	S ANALYSIS IS ACCEPTABLE.										

QC Item	Comments								
3	LCS data requires result qualifications as follows:								
	VOC: Acetone had high recovery for QC associated with aqueous samples. All samples were reported as non-detect for								
	acetone; thereofore, no additional action required								
	SVOC: for sample S1-1 the following compounds had a low recovery:								
	2-chlorophenol, 4-chloro-3-methyl phenol, 2,4-dichlorophenol, 4-Bromophenyl phenyl ehter, Benzyl alcohol								
4	MS/MSD failures were present. All were evaluated.								
	The laboratory case narrative provides detailed explanations of the compounds failing.								
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision								
	and accuracy are demonstrated by LCS QC.								
	-No recovery for 2-chloroethyl vinyl ether - LCS OK so no additional action required.								
5	Some metals required dilutions due to matrix interference. Details are provided in								
	case narrative. All diluted samples have elevated reporting limits to reflect the dilution.								
	No additional action required.								
1	Samples were collected in the field for future analysis if required and held at the lab.								
	Analysis of any held samples are reported separately.								
2	Samples S18-4-0.5 through S18-4-INT were received out of hold. These samples were not reported or analyzed. The								
	location was resampled. No additional action required.								
1									

Overall Data Assessment for Group:

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Data Qualifications

Duta & aminimons			
Sample ID	Analytes	Qualifier	Reason for Qualification
S1-1	2-chlorophenol	R	Low recovery for lab spike
S1-1	4-chloro-3-methyl phenol	R	Low recovery for lab spike
S1-1	2,4-dichlorophenol	R	Low recovery for lab spike
S1-1	4-Bromophenyl phenyl ether	R	Low recovery for lab spike
S1-1	Benzyl alcohol	R	Low recovery for lab spike

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	FA8925										
ysis Method: 8260B	1110/20	_			Г	Water	✓ Soil				
	A OUTEONIA INDIANA	_	Mat	trix	: _	_ water	<u> </u> 50	Other		_	
Sample Locations in Batch:											
SOIL: A12-5-	2, A12-3-2, A12-3-10, A12-1-0.5, A12-1-5, A1	12-2-:	5, A1	2-3	-5, A1	2-5-0.5					
										Entit of	
Split Samples DUP-1	20 split with A12-1-5										
Quality Control Samples As	sociated With Batch Field:	TR	IP BI	LAN	VK (T	TB-21)					
	Lab:	MF	ТНС)DI	BLAN	JKS, LAB	SPIKES, MS	/MSD, SURRC)GA	TES	
Reviewed by & Date:	Kate Fuller 11-7-13						, , , , ,	/ 1.102/00 Take	0/1	110	
Quality Control	D :	_							_		
Quality Control	Requirements						eck			F	Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	+				(* See QC	Comments)			(:	see comments)
. , ,	The state of the s	1.7	Ок		٦						
	(Case Narrative/Conformance Summary,		JOK	_	J No*	Not pr	ovided	Comment#:			
	Results, COC, QC Summaries)										
TT 11' (T) (T)	All samples on COC reported	4	ОК		No*			Comment#:			
Holding Times (HT)	Water	44	ОК	Ļ	No*	✓ N/A		Comment#:		L	Flags Applied
Containers and Preservation	Soil		ОК			N/A					Flags Applied
Blanks (MB,TB,EB, FB/AB)	S Containers and perservation compliant Detects (> MDL or RL)		OK		No*	-		Comment#:		上	Flags Applied
Diames (MD, 1D, LD, 1D/AD)	Method Blank	1	No	_	Tv+						
	Trip Blank		1	十	Yes*	and the last of th		Comment#:			
	Equipment Blank	H	No	十	Yes*			Comment#:			
(Blank Spike S)	LCS Data Provided	1	ОК	+	No*	IV/A		Comment#:	\dashv		
	Acceptance criteria met		ОК		No*			Comment#:		Ш	Flags Applied
MS/MSD	Matrix Spikes Provided	4	ОК		No*	None*				$\overline{}$	
	Acceptance Limits:		OK	4	No*		,	Comment#:	1	Ш	Flags Applied
Surrogate Recovery Summar	8	4	ОК		No*	☐ Not pro	ovided				
0 17 1	Recovery Limits:		OK	✓	No*			Comment#:	2	Ш	Flags Applied
Sample Evaluation	All hits within cal. Range	1	OK		No*			Comment#:			Flama Amadiant
E' II D. II (TD)	Sample Dilutions		No	✓	Yes*			Comment#:	3	Ш	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK		No*	∐ N/A	See A	Analysis Below	4		Flags Applied
Sample Receipt Summary	NO ISSUES NOTED										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LED	SUN	1M	ARIES	S OF HOL	D TIMES, Q	C ISSUES,			
AND CONFORMANCE.											
Review of field notes (note an	y devictions from words also so at least										
	y deviations from work plan or other anomal	ies th	iat m	ay I	oias da	ata):	SAMPLE A1	2-3-2 HAD HI	GH		
OVM READINGS.											
Field Duplicate Analyis: R	PD CALCIII ATIONS RETWEEN DDIAMON	/ A N II	D CDI	ΙŢΤ	CARE	DIECRA	ICED ED C	6 0 1 0 / m c = = = = = =			
	APD CALCULATIONS BETWEEN PRIAMRY										
	DICATES THAT THREE OF THE FOUR DE								AN	D	
LIFIED WITH A j AND	THE OTHER WAS WITHIN 3 REPORTING	G LII	MITS	6. R	ESUL	TS ARE A	ACCEPTABI	LE.			
_		_									

QC Item				Comments								
1	MS/MS	D failures were present. All v	were evaluated									
	The labo	oratory case narrative provide	es detailed expl	anations of the compounds failing.								
	Analyse	s for LCS met criteria for faile	ed compounds,	except where otherwise noted; therefore, acceptable precision								
	and accu	ıracy are demonstrated by LO	CS QC.									
2	Surroga	te recoveries above the limits	occurred; how	ever, they were for internal standards only and								
	There wa	There was a high recovery for 4-bromoflurobenzene in sample A12-5-0.5 but the confirmation run is ok.										
	No further action is required.											
_		. 16 17	2G _ 1 _ i (A 12 2 10 Markoro diluted the laboratory has provided								
3				A12-3-10. Where diluted, the laboratory has provided								
	elevated	l reporting limits and flags to	denote the all	ution. No additional qualification is required.								
	-											
	-											
	-											
Overall Data A	ssessment fo	or Group:										
The weet life pro	contad in this	data nackage have been vali	dated in accord	ance with validation criteria presented in the EPA Functional Guidelines								
for Organic and	d Inorganic D	lata Review (OSWER 9240.1-(of the data quality objectives v	<u>J5A-P) dated O</u> with the excepti	ctober 1999. Data is found to be representative and quantitative meeting								
the precision at	na accuracy c	i lile data quanty objectives t	with the except	ions noted test, 2 maj.								
Data Qualifica	tions											
Sample	e ID	Analytes	Qualifier	Reason for Qualification								
Non	ie	-	-	No additional action required								
			6									

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	FA 8925R	=									
ysis Method: 8260B		-	Mat	riv	. г	Water	✓ Soil	Other			
		-	Mat	I IA	• –						
Sample Locations in Batch:	SOIL: A12-3-15										
Split Samples NONE											
					3-1-2-2-2						•
Ouality Control Samples As	sociated With Batch Field:	NO	ONE -	TF	RIP BI	ANK RE	PORTED W	ITH REMAINI	DER	OF	BATCH
	Lab:							MSD, SURRC			
Daviawad by & Data	LISA HENNESSY 11/1/2013	.,,,,				TO, El ID		, web, serve	O/ I	110	1
Reviewed by & Date:	LISA HENNESST 11/1/2015			_							
Quality Control	Requirements					Ch				F	Flags Applied
Data Pkg Complete (DP)	All magazinad daliyyanahlag in mlag					(* See QC	Comments)			(see comments)
Data Fkg Complete (DF)	All required deliverables in pkg.	_	7	_	_						
	(Case Narrative/Conformance Summary,	~	ОК	L	_ No*	Not pr	ovided	Comment#:			
	Results, COC, QC Summaries)										
	All samples on COC reported		ок	~	No*			Comment#:	1		
Holding Times (HT)	Water Soil	 	OK	+	No*	✓ N/A	***************************************	Comment#:		Ļ	Flags Applied
Containers and Preservation		\ \ \ \		┾	No*	∐ N/A		Comment#:		\vdash	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB)		'	JOK		INO			Comment#.			j i lags Applieu
	Method Blank	~	No		Yes*	· N/A		Comment#:			
	Trip Blank		No	F	Yes			Comment#:	2		
(Blank Spike S)	Equipment Blank LCS Data Provided	<u> </u>	No	+	Yes	¹ ✓ N/A		Comment#:			
(Blank Spike S)	Acceptance criteria met	4	OK OK	┢	No*			Comment#:			Flags Applied
MS/MSD	Matrix Spikes Provided	~		t	No*	None*	I	сопписнит.			1
	Acceptance Limits:		ОК	√	No*			Comment#:	3	L	Flags Applied
Surrogate Recovery Summa		~			No*	☐ Not pr	ovided				Flags Applied
	Recovery Limits:	✓	OK	-	No*			Comment#:			Triags Applica
Sample Evaluation	All hits within cal. Range Sample Dilutions	1	OK No	F	No*	:		Comment#:			Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	-	OK	F	No*		Saa	Analysis Below		$\overline{}$	Flags Applied
ricia Daplicate (FD)	recession of native vs field duplicate(s)		JOK	_] 140	L N/A	366	Analysis Below			riags Applied
Sample Receipt Summary	SAMPLES RECEIVED WITHIN REQU	JIRI	ED TI	EM	PERA	TURES. A	AND PRESE	RVED. NO INT	ΓEG	RIT	Υ
ISSUES NOTED.											
Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LEI	SUN	ИΜ	ARIE	S OF HO	LD TIMES, 0	QC ISSUES,			
AND CONFORMANCE.						n .					
Review of field notes (note a	ny deviations from work plan or other anomal	ies t	hat m	av	bias o	lata): NO l	ISSUES NOT	ΓFD			
	and the second s			,	DIG (Inta). 110 1	BBCLBTTO	ILD			
											
					_						
Field Duplicate Analyis:	NOT APPLICABLE										
		_	_	_	_				_		

OC Item	COCia	for larger cample set. This set	mplo was initis	Comments ally held for VOCs but later requested. All analyses were
1		hold times.	npie was nitia	my field for VOCs but fater requested. All aliaryses were
	within	noid times.		
3	Some N	MS/MSD percent recoveries w	ere outside OC	C limits.
				planations of the compounds failing.
				, except where otherwise noted; therefore, acceptable precision
		curacy are demonstrated by Lo		* ***
2	Trip bl	ank was associated with the p	arent sample d	lelivery group FA 8925 and is validated under that group
		•	-	
				4
		×		
Overall Data As				
for Organic and	Inorganic I	s data package have been valio Data Review (OSWER 9240.1-0 of the data quality objectives w	5A-P) dated O	lance with validation criteria presented in the EPA Functional Guidelines ctober 1999. Data is found to be representative and quantitative meeting ions noted below, if any.
Data Qualificati	ions			
Sample		Analytes	Qualifier	Reason for Qualification
None		-	-	No qualification required.
				*

Project Name & Task: (Clean Harbors-Wichita Phase IV RFI									
Semple Delivery Group:	FA8926	-								
ysis Method:	8260B, 8270D, metals	-	Ma	4		✓ Water	✓ Soil	Other		
		-	Ma	trix	: -	water		□ Other		
Sample Locations in Batch: _	S25-1									
	S14-3-0.5, S14-3-2, S25-1-0.5, S25-1-2									
Split Samples										
Quality Control Samples Asso		TB					-			
	Lab: METHOD BL	ANI	KS, L	AB	SPIK	ES, MS/MS	SD, SURRO	GATES		
Reviewed by & Date:	Kfuller 11/7/13									
Quality Control	Requirements	Т				Ch	eck			Flags Applied
Data Dia Carata (DD)		$oxed{oxed}$				(* See QC	Comments)			(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.	_	_							
9	(Case Narrative/Conformance Summary,	Ľ	′] OK		No*	Not pr	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported		ОК	4	′ No*			Comment#: 1	1	
Holding Times (HT)	Water	~			No*	N/A		Comment#:		Flags Applied
Containers and Preservations	Soil	 	OK	~				2	2	Flags Applied
Blanks (MB,TB,EB, FB/AB)	Containers and perservation compliant Detects (> MDL or RL)	\ \	OK	L	No*	i .		Comment#:		Flags Applied
(112,12,12)	Method Blank	1	No		Yes*	*		Comment#:	_	
	Trip Blank	1	_	F	Yes*			Comment#:	-	
	Equipment Blank		No	Ī	Yes*			Comment#:		
(Blank Spike S)	LCS Data Provided	1	ОК		No*					
MS/MSD	Acceptance criteria met	1	OK	✓				Comment#: 3	3	✓ Flags Applied
W15/W15D	Matrix Spikes Provided Acceptance Limits:	1		+	No*	None*				Flags Applied
Surrogate Recovery Summary	Method surrogates used	-	ok ok	<u> </u>	7			Comment#: 4	-	
Surrogate Recovery Summary	Recovery Limits:	1	7	十	No*	Not pro	ovided	Comment#:		Flags Applied
Sample Evaluation	All hits within cal. Range	1	_	T	No*		***************************************	Comment#:		
	Sample Dilutions		No	1	Yes*			Comment#: 5		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)] ок] No*	✓ N/A	See	Analysis Below	_	Flags Applied
Sample Receipt Summary	No issues noted.									
F	TVO ISSUES HOLEU.									
G N 1 6										
Case Narrative Comments:	REVIEWED AND INCLUDES DETAILI	ED S	SUMN	ΛAI	RIES	OF HOLD	TIMES, QC	ISSUES,		
AND CONFORMANCE.										
D. I							-			
Review of field notes (note any	deviations from work plan or other anomali	es tl	hat m	ay l	bias d	lata):				
Very high OVM reading at S14-3	-0.5									
Field Duplicate Analyis: No	t applicable									

<u>QC Item</u> <u>Comments</u>

3	LCS is below limit for: 4-Nitrophenol, 4-Bromophenyl phenyl ether, 3,3'-Dichlorobenzidine (S14-4-0.5, S25-1-0.5, S25-1-2),
	qualified below
	LCS recoveries were above the limits for Acetone.
	Associated samples were ND. No additional action required.
4	MS/MSD failures were present. All were evaluated.
	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision
	and accuracy are demonstrated by LCS QC.
2	Re-extraction out of hold time for SVOCs; results significantly higher than original run, higher results reported (S14-3-0.5,
	S14-4-2, S25-1-0.5, S25-1-2). Data to be qualified.
5	Sample dilutions up to 4
1	Samples were collected in the field for future analysis if required and held at the lab.

Analysis of any held samples are reported separately.

Overall Data Assessment for Group:

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

ata Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
S14-3-0.5	4-Nitrophenol,	R	Low LCS recovery
S14-3-0.5	4-Bromophenyl phenyl ether,	R	Low LCS recovery
S14-3-0.5	3,3'-Dichlorobenzidine	R	Low LCS recovery
S25-1-0.5	4-Nitrophenol,	R	Low LCS recovery
S25-1-0.5	4-Bromophenyl phenyl ether,	R	Low LCS recovery
S25-1-0.5	3,3'-Dichlorobenzidine	R	Low LCS recovery
S25-1-2	4-Nitrophenol,	R	Low LCS recovery
S25-1-2	4-Bromophenyl phenyl ether,	R	Low LCS recovery
S25-1-2	3,3'-Dichlorobenzidine	R	Low LCS recovery
S14-3-0.5			
S14-3-2	Detected SVOCS	J.	Reextracted and rerun out of hold time.
S25-1-0.5	Non-detected SVOCs	UJ	Accordances and Terminous of note that
S25-1-2			

Sample Delivery Group: FA8926R ysis Method:	Project Name & Task:	Clean Harbors-Wichita Phase IV RFI									
Sample Locations in Batch: Soll: \$14-3.5, \$25-1-5 Split Samples NONE Quality Control Samples Associated With Batch Field: Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES Reviewed by & Date: LISA HENNESSY 11/12013 Quality Control Requirements Class Narrative Comments: (Case Narrative Comments) All required deliverables in pkg. (Case Narrative Comments) All required fellverables in pkg. (All Republications) All required fellverables in pkg. All required fel	Semple Delivery Group:		-								
Sample Locations in Batch: SOIL: \$14-3.5, \$25-1-5 Split Samples NONE		THOSEON	-	N.C 4		Г	Water	Soil	Other		
Quality Control Samples Associated With Batch Field: Lab: METHOD BLANKS, LAB SPIKES, MSAMSD, SURROGATES Reviewed by & Date: LISA HENNESSY 11/1/2013 Quality Control Requirements Claes Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported Water Soil Containers and Preservations Containers and preservation compliant Soil Containers and Preservation Containers and preservation compliant Frip Blank Fupingment Blank			-	Mat	rix	: ∟	water	<u> </u>	□ Other	_	
Quality Control Samples Associated With Batch Field: Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES Reviewed by & Date: LISA HENNESSY 11/12013 Quality Control Requirements Check (*See QC Comments) All required deliverables in pkg. ("Case Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported OK No* Not provided Comment#: I Holding Times (IIT) Water Soil V OK No* N/A Comment#: I Holding Times (IIT) Water Soil V OK No* N/A Comment#: I Flags Applied (see comments) Blanks (MS,TB,EB, FB/AB) Detects (*MD, or RL) Method Blank V OK No* N/A Comment#: I Flags Applied Flags Applied V OK No* N/A Comment#: I Flags Applied V OK No* Comment#: I Method Blank N/A Comment#: I Flags Applied V OK No* Comment#: I Matrix Spikes Provided V OK No* N/A Comment#: I Acceptance criteria met V OK No* Comment#: I Acceptance criteria met V OK No* Comment#: I Acceptance Limits: OK No* Comment#: I Acceptance Limits: OK No* Comment#: I Flags Applied Plags Applied V OK No* Comment#: I Flags Applied N/A None* Comment#: I Flags Applied N/A N/A N/A Comment#: I Flags Applied N/A N/A N/A Comment#: I Flags Applied N/A N/A N/A N/A Comment#: I Flags Applied N/A	Sample Locations in Batch:	SOIL: S14-3,5, S25-1-5									
Quality Control Samples Associated With Batch Field: Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES Reviewed by & Date: LISA HENNESSY 11/12013 Quality Control Requirements Check (*See QC Comments) All required deliverables in pkg. ("Case Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported OK No* Not provided Comment#: I Holding Times (IIT) Water Soil V OK No* N/A Comment#: I Holding Times (IIT) Water Soil V OK No* N/A Comment#: I Flags Applied (see comments) Blanks (MS,TB,EB, FB/AB) Detects (*MD, or RL) Method Blank V OK No* N/A Comment#: I Flags Applied Flags Applied V OK No* N/A Comment#: I Flags Applied V OK No* Comment#: I Method Blank N/A Comment#: I Flags Applied V OK No* Comment#: I Matrix Spikes Provided V OK No* N/A Comment#: I Acceptance criteria met V OK No* Comment#: I Acceptance criteria met V OK No* Comment#: I Acceptance Limits: OK No* Comment#: I Acceptance Limits: OK No* Comment#: I Flags Applied Plags Applied V OK No* Comment#: I Flags Applied N/A None* Comment#: I Flags Applied N/A N/A N/A Comment#: I Flags Applied N/A N/A N/A Comment#: I Flags Applied N/A N/A N/A N/A Comment#: I Flags Applied N/A											
Quality Control Samples Associated With Batch Field: Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES Reviewed by & Date: LISA HENNESSY 11/12013 Quality Control Requirements Check (*See QC Comments) All required deliverables in pkg. ("Case Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported OK No* Not provided Comment#: I Holding Times (IIT) Water Soil V OK No* N/A Comment#: I Holding Times (IIT) Water Soil V OK No* N/A Comment#: I Flags Applied (see comments) Blanks (MS,TB,EB, FB/AB) Detects (*MD, or RL) Method Blank V OK No* N/A Comment#: I Flags Applied Flags Applied V OK No* N/A Comment#: I Flags Applied V OK No* Comment#: I Method Blank N/A Comment#: I Flags Applied V OK No* Comment#: I Matrix Spikes Provided V OK No* N/A Comment#: I Acceptance criteria met V OK No* Comment#: I Acceptance criteria met V OK No* Comment#: I Acceptance Limits: OK No* Comment#: I Acceptance Limits: OK No* Comment#: I Flags Applied Plags Applied V OK No* Comment#: I Flags Applied N/A None* Comment#: I Flags Applied N/A N/A N/A Comment#: I Flags Applied N/A N/A N/A Comment#: I Flags Applied N/A N/A N/A N/A Comment#: I Flags Applied N/A											
Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES	Split Samples NONE										
Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES									4		
Lab: METHOD BLANKS, LAB SPIKES, MS/MSD, SURROGATES	Quality Control Samples As	sociated With Batch Field:	NC	NE '	ΓRΙ	P BI	ANK IS V	LIDATED	WITH FA 8926		
Reviewed by & Date: LISA HENNESSY 11/1/2013 Quality Control Requirements						10.00				A TE	· · · · · · · · · · · · · · · · · · ·
Quality Control Requirements Check (* See QC Comments) Flags Applied (see comments) Data Pkg Complete (DP) All required deliverables in pkg. (Case Narrative/Conformance Summary, Results, COC, QC Summaries) V OK No* Not provided Comment#: Comment#: III All samples on COC reported OK No* No* Not Not Not Comment#: III Flags Applied Holding Times (HT) Water OK No* No* Not Not Comment#: III Flags Applied Containers and Preservations Containers and preservation compliant IV OK No* No* Comment#: III Flags Applied Blanks (MB,TB,EB, FB/AB) Detects (> MDL or RL) Detects (> MDL or RL) III Flags Applied Wish (MB,TB,EB, FB/AB) Detects (> MDL or RL) III III <t< th=""><th>Paviawad by & Data</th><th></th><th>171</th><th>LIII</th><th>ענ</th><th>DLAI</th><th>NKS, LAD</th><th>STIKES, MIS</th><th>S/MSD, SURRUG</th><th>AIE</th><th>.5</th></t<>	Paviawad by & Data		171	LIII	ענ	DLAI	NKS, LAD	STIKES, MIS	S/MSD, SURRUG	AIE	.5
Case Narrative Conformance Summary, Results, COC, QC Summaries Case Narrative Comment#: All samples on COC reported OK No* N/A Comment#: Flags Applied Flags Applied Containers and preservations Containers and preservation compliant OK No* N/A Comment#: Flags Applied	Reviewed by & Date.	LISA HENNESS I 11/1/2015									
All required deliverables in pkg. Case Narrative/Conformance Summary, Results, COC, QC Summaries) J OK	Quality Control	Requirements	Check						Flags Applied		
Case Narrative/Conformance Summary, Results, COC, QC Summaries) All samples on COC reported OK No* N/A Comment#: Flags Applied Flags Applied OK No* N/A Comment#: Flags Applied Flags Applied OK No* N/A Comment#: Flags Applied Flags	Data Plea Complete (DD)	All magnined deliverables in all-	_			(* See QC	Comments)		_	(see comments)
Case Narrative/Conformance Summary, Results, COC, QC Summaries) Results, COC, QC Summaries All samples on COC reported OK No* N/A Comment#: Flags Applied N/A No* N/A N/A N/A N/A N/A N/A N/A Flags Applied N/A	Data Fkg Complete (DF)	All required deliverables in pkg.	_	,		_					
Results, COC, QC Summaries) All samples on COC reported OK No* N/A Comment#: Flags Applied		(Case Narrative/Conformance Summary	Ľ	OK	L	_ No*	Not pr	ovided	Comment#:		
All samples on COC reported											
Water			T	ОК	[~	No*			Comment#: 1	1	
Containers and Preservations Blanks (MB,TB,EB, FB/AB) Detects (> MDL or RL) Method Blank Comment#: CS Data Provided	Holding Times (HT)			ОК							Flags Applied
Detects (> MDL or RL)	G		-	<u> </u>		_					
Method Blank				OK		No*			Comment#:	4	Flags Applied
Trip Blank Equipment Blank No	Bianks (MB, 1 B, EB, FB/AB)		 _ ,	I NI -	_	٦,, ,			0 0	_	
Equipment Blank			F	_	┾					-	
CS Data Provided		_	十	-	十	_				-	
Acceptance criteria met	(Blank Spike S)		1	_	十				Comment.	+	
MS/MSD Matrix Spikes Provided Acceptance Limits: OK No* None*		Acceptance criteria met	1	-	T	_			Comment#:		Flags Applied
Method surrogates used	MS/MSD	Matrix Spikes Provided	1	-		No*	None*			٦,	
Recovery Limits: V OK		Acceptance Limits:		ОК	1	No*			Comment#: 3		Flags Applied
Sample Evaluation All hits within cal. Range Sample Dilutions All	Surrogate Recovery Summa	ry Method surrogates used	✓	ОК		No*	☐ Not pr	ovided			Class Applied
Sample Dilutions Field Duplicate (FD) Precision of native vs field duplicate(s) OK No* No* No* No* See Analysis Below Flags Applied No*			4		L				Comment#:		riags Applied
Field Duplicate (FD) Precision of native vs field duplicate(s) OK No* No* No* No* No* Flags Applied Flags Applied Flags Applied Flags Applied Flags Applied Sample Receipt Summary 1 VIAL FOR S14-3-5' BROKEN. LAB WAS ABLE TO ANALYZE WITH REMAINING VIAL. Case Narrative Comments: AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED	Sample Evaluation			-	L						Flags Applied
Sample Receipt Summary 1 VIAL FOR S14-3-5' BROKEN, LAB WAS ABLE TO ANALYZE WITH REMAINING VIAL. REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED			<u></u>	-	누				Comment#:	<u></u>	
Case Narrative Comments: REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED	Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK	L	No*	✓ N/A	See	Analysis Below		Flags Applied
Case Narrative Comments: REVIEWED AND INCLUDES DETAILED SUMMARIES OF HOLD TIMES, QC ISSUES, AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED	Cample Dessint Cummany	1 WIAL FOR CLA 2 SUPPOWENT LAD W	7.4.0	4 DI	n m		I A I WOD II	1011 D 121 6 1			
AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED	Sample Receipt Summary	1 VIAL FOR \$14-3-5 BROKEN, LAB W	AS	ABL.	ΕI	UAN	ALYZE W	ITH REMA	INING VIAL.		
AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED											
AND CONFORMANCE. Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED	Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED (STIM	ıπλ	DIEC	OE HOLD	TIMES OF	riccine		
Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED		REVIEWED AND INCLUDES DETAIL	ED :	SUM	VIA	KIES	OF HOLD	TIMES, QC	188UES,		
	AND CONFORMANCE.										
Field Duplicate Analyis: NOT APPLICABLE	Review of field notes (note an	ny deviations from work plan or other anomal	ies t	hat m	ay	bias o	data): NON	E NOTED			
Field Duplicate Analyis: NOT APPLICABLE											
Field Duplicate Analyis: NOT APPLICABLE											
Field Duplicate Analyis: NOT APPLICABLE											
Held Duplicate Analyss: NOT APPLICABLE	E' II D. P	NOT A PRIVATE A PART									
	NOT APPLICABLE										
											-

QC Item			<u>Comments</u>									
1	Samples were collected in	the field for future analysis.	is. Analysis of VOCs was requested on 10-24-13.									
	Chain of custody covers sa	imples in 8926 and 8926R.	R. All requested analyses to be run for this batch are recorded in									
	the laboratory change order.											
3	MS/MSD failures were pro	esent. All were evaluated.										
	The laboratory case narrati	ve provides detailed explana	anations of the compounds failing.									
	Analyses for LCS met crite	eria for failed compounds, e	except where otherwise noted; therefore, acceptable precision									
	and accuracy are demonstr	ated by LCS QC.										
2	Trip blank was associated	with the parent sample delive	livery group FA 8926 and is validated under that group									
				•								
Inorganic Data Revie	in this data package have be	dated October 1999. Data	be with validation criteria presented in the EPA Functional Guic ta is found to be representative and quantitative meeting the pre-	lelines for Organic and cision and accuracy of the								
Data Qualifications	:											
Sample ID		es Qualifier	er Reason for Qualification									
None	-	-	No Qualifiication required									

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI											
Semple Delivery Group:	FA8927	_										
ysis Method:	8260B, 8270D, 8015C, 8081B, 8151A, n	n	Ma	trix	. [✓ Water	✓ Soil	Other				
Sample Locations in Batch:					•							
ample Economy in Dutent	DC-10-0.5, DC-11-0.5, DC-10-2, DC-9-(
).5										
	AQUEOUS: DC-9											
Split Samples							-					
Quality Control Samples As	sociated With Batch Field:	DU	JP-10	16 (DC-9), TB						
	Lab:	MF	ЕТНС	DD I	BLAN	KS. LAB S	SPIKES, MS	/MSD, SURROC	TAF	ES		
Reviewed by & Date:	Kfuller 11/8/13					, , , , , , ,	,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
		_							_			
Quality Control	Requirements						eck			Flags Applied		
Data Pkg Complete (DP)	All required deliverables in pkg.	+				(* See QC	Comments)			-	see comments)	
, , , , , , , , , , , , , , , , , , ,	ping.		Ок	Г	7*							
	(Case Narrative/Conformance Summary,	-] OK	L	_ NO*	Not pr	ovided	Comment#:				
	Results, COC, QC Summaries)		_	_	_							
Holding Times (HT)	All samples on COC reported	4	OK		No*			Comment#:	1	_		
Holding Times (HT)	Water Soil	1		┝	No*			Comment#:		⊬	Flags Applied	
Containers and Preservation		1	_	十	No*			Comment#:		⊬	Flags Applied	
Blanks (MB,TB,EB, FB/AB)		1	JOK	_	INO	-		Comment#:		┞	Flags Applied	
, , , , , , , , , , , , , , , , , , , ,	Method Blank	1	No	Т	Yes*	k N/A		Comment#:				
	Trip Blank	1		T	Yes			Comment#:				
	Equipment Blank		No		Yes*			Comment#:				
(Blank Spike S)	LCS Data Provided	1	ОК		No*					Г	letono Annibud	
	Acceptance criteria met		ОК	1	No*			Comment#:	2	L	Flags Applied	
MS/MSD	Matrix Spikes Provided	1	ОК		No*	None*					Flags Applied	
	Acceptance Limits:	늗	OK					Comment#:	3		Tiags Applied	
Surrogate Recovery Summa				Ļ	No*	Not pr	ovided	_			Flags Applied	
Sample Evaluation	Recovery Limits: All hits within cal. Range	+	OK					Comment#:	4			
Sample Evaluation	Sample Dilutions	1	OK No	7	No* Yes*			Comment#:	5		Flags Applied	
Field Duplicate (FD)	Precision of native vs field duplicate(s)	1	_	卡	No*		Caa		3		Flogo Applied	
reid Duplicate (1 D)	recision of native vs field duplicate(s)		JOK] 140	N/A	See	Analysis Below			Flags Applied	
Sample Receipt Summary	No issues noted.											
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED S	SUM	MA	RIES	OF HOLD	TIMES, QC	ISSUES,				
AND CONFORMANCE.												
Daview of field notes (note on	ay devictions from wealth less and the second	•	1 4			1.48				-		
	y deviations from work plan or other anomal	ies t	hat m	ıay	bias c	lata):						
No issues noted.												
Field Duplicate Analyis:	DUP-1016 = DC-9 = RPD ANALYSIS - 1	MA	$X = 8^{\circ}$	% V	VHICI	H IS LESS	THAN 40%					
_												

QC Item				Comments
2	LCS rec	overies were above the limits	for Acetone, D	Dichlorodifluoromethane
	Ā	Associated samples were ND.	No additiona	al action required.
3	MS/MS	SD failures were present. All v	were evaluated	d.
	The lab	oratory case narrative provide	es detailed exp	planations of the compounds failing.
	Analyse	es for LCS met criteria for faile	ed compounds	s, except where otherwise noted; therefore, acceptable precision
	and acc	uracy are demonstrated by LC	CS QC.	
5	Sample	dilutions up to 50		
4	The sur	rogate recovery of a pesticide	was below 10	0% due to dilution. No additional action is required.
1	Samples	were collected in the field for fu	ture analysis if r	required and held at the lab.
	Analysis	s of any held samples are reported	d separately.	
Overall Data Asses	ssment for	Group:		
The results presente	ed in this da	ta package have been validated in R 9240.1-05A-P) dated October	n accordance with 1999. Data is f	ith validation criteria presented in the EPA Functional Guidelines for Organic and found to be representative and quantitative meeting the precision and accuracy of the
data quality objective	ves with the	exceptions noted below, if any.		
Data Qualification	18			
Sample II)	Analytes	Qualifier	Reason for Qualification
None		-	-	No additional action required

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI									
Sample Delivery Group:	FA 8927R	-								
ysis Method:			Mat	triv	. [Water	✓ Soil	Other		
Sample Locations in Batch:	SOIL: DC-8-5 DC-9-5	•				_				
 	AQUEOUS: NONE									
	AQUEOUS. NONE									(2)
		_								
Split Samples NONE										
Quality Control Samples As	ssociated With Batch Field:	NO	ONE-	ASS	5OCI	ATED TRI	P BLANKS	VALIDATED V	NIT	H 8927
	Lab:	Service and Service						/MSD, SURRO	_	
Reviewed by & Date:	LISA HENNESSY 11/4/2013					and the second	,	,		
Quality Control	Requirements					Che				Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	<u> </u>				(* See QC (Comments)			(see comments)
Data 1 kg Complete (D1)	An required deliverables in pkg.	L			7	_				
	(Case Narrative/Conformance Summary,	[OK		No*	Not pro	ovided	Comment#:		
	Results, COC, QC Summaries)									
	All samples on COC reported		ОК	1	No*			Comment#:	1	
Holding Times (HT)	Water		ОК		No*	✓ N/A		Comment#:		Flags Applied
C	Soil	Ļ	ОК	~	1	N/A		Comment#:	2	✓ Flags Applied
Containers and Preservation		-	OK		No*			Comment#:		Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL) Method Blank	1	No	_	Vook	·		C		
	Trip Blank	F	No No	十	Yes*			Comment#:	3	
	Equipment Blank	十	No	十	Yes*			Comment#:	3	
(Blank Spike S)	LCS Data Provided	~	ОК		No*	,,,,		Comment.	\neg	
	Acceptance criteria met		ОК	1	No*			Comment#:	4	Flags Applied
MS/MSD	Matrix Spikes Provided	4	ОК		No*	☐ None*				Class Assulted
	Acceptance Limits:	Ļ	OK		No*	_		Comment#:	5	Flags Applied
Surrogate Recovery Summa		Ļ	OK	ᄂ	No*	Not pro	ovided			Flags Applied
Sample Evaluation	Recovery Limits: All hits within cal. Range	十	OK	十	No*			Comment#:		
Sample Evaluation	Sample Dilutions	┾	OK	╄	No*			Comment#:		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	十	No OK	┢	Yes*			Comment#:	-	
ricia Duplicate (FD)	r recision of native vs field duplicate(s)		JOK] INO	∐ N/A	See A	Analysis Below		Flags Applied
Sample Receipt Summary	ALL SAMPLES RECEIVED WITH PRO	OPI	R TE	ME	FRAT	TURE				
			JIC TE	71411	LICI	TORE				
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LEI	SUN	лм	ARIE	S OF HOL	D TIMES C	OC ISSLIES		
AND CONFORMANCE.						0 01 1102	D THILE, C	¿C 188 01 8,		
AND CONTORVIANCE.					-					
Review of field notes (note ar	ny deviations from work plan or other anomali	es t	hat m	ay	bias d	ata): NON	E NOTED			
Field Duplicate Analyis:	NOT APPLICABLE									
	_									

QC Item				<u>Comments</u>					
1	Sample	s in this batch were initially s	ubmitted as "h	old" samples. A request to run the analyses was submitted					
	to the la	ab on 10-24-13 and 10-30-13.							
				sample DC-9-5 was analyzed 7 days pass hold. The sample					
	was pro	operly preserved. Validation	flags will be ap	oplied. See Data Qualification Table below					
4	LCS rec	coveries were above the limits	for Chloroeth	ane					
		Associated samples were ND.	No additiona	l action required.					
5	MS/MS	SD failures were present. All	were evaluated	d.					
				planations of the compounds failing.					
	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision								
	and accuracy are demonstrated by LCS QC.								
3	Trip bla	nk was associated with the paren	t sample deliver	y group FA 8927 and is validated under that group					
Overall Data Assess			dated in accord	dance with validation criteria presented in the EPA Functional Guidelines					
for Organic and Ino	rganic D	oata Review (OSWER 9240.1-0	05A-P) dated C	October 1999. Data is found to be representative and quantitative meeting					
the precision and ac	curacy o	of the data quality objectives v	with the except	ions noted below, if any.					
Data Qualifications	s								
Sample ID		Analytes	Qualifier	Reason for Qualification					
DC-9-5		Detected VOCs	J	Samples were properly preserved; however the analysis was done outside					

UJ

Non-detected VOCs

DC-9-5

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI											
Semple Delivery Group:	FA8931											
ysis Method:	8260B	•	Ma	trix	x:	V	Water	✓ Soil	Other			
Sample Locations in Batch:	AQUEOUS: A12-1, A12-3									_		
	SOIL: A12-4-5, A12-1-10, A12-1-15, A12-4-2											
	A12-4-2, A12-4-0.5, A12-1-2, A12-1-IN	ГА	12-3	-19	A	12-5-	;					
Split Samples		1,11	12 3	17,	, 1 1	12 3 .	,					
Spit Samples	William											
Ouglity Control Samples As	sociated With Batch Field:	EC										
Quanty Control Samples As), TB	- Charles								
	Lab:	ME	ETHO	DD.	BL	ANK	S, LAI	3 SPIKES, N	MS/MSD, SURROGA	ATES	S	
Reviewed by & Date:	Kfuller 11/1/13											
Quality Control	Requirements						(Check		T	Fla	gs Applied
Data Black Complete (DB)	A11 - 1111 - 11 1 1	_				(*	See Q	C Comments)	\perp	(see	e comments)
Data Pkg Complete (DP)	All required deliverables in pkg.	L	-	_		_						
	(Case Narrative/Conformance Summary,	Ľ	ОК	L		No* L	Not	provided	Comment#:			
	Results, COC, QC Summaries)											
	All samples on COC reported	~	ОК			No*			Comment#:			
Holding Times (HT)	Water	1		_=	_	No*	N/A		Comment#:			lags Applied
Containers and Preservation	Soil Containers and preservation compliant	\ \ \		+		No*	N/A	<u> </u>	C	_		lags Applied
Blanks (MB,TB,EB, FB/AB)		1~	OK			No*			Comment#:	+		lags Applied
()	Method Blank	1	No	Т	7	Yes*	Пи	/A	Comment#:	-		
	Trip Blank	~		Ī	_	Yes*		/A	Comment#:			
	Equipment Blank		No		√ \	Yes*		/A	Comment#: 1			
(Blank Spike S)	LCS Data Provided	1			_	No*					П	lags Applied
MS/MSD	Acceptance criteria met	 	OK		_	No*	٦		Comment#: 2			падэ Арріїса
IVIS/IVISD	Matrix Spikes Provided Acceptance Limits:	<u> </u>	OK OK	-	_	No* L No*	Non	e*	Comment#: 3	-1	F	lags Applied
Surrogate Recovery Summa	-	~	_	F	$\overline{}$	vo*	7 Not	provided	Comment#. 3	+		
Surrogate Recovery Summa	Recovery Limits:	1		卡	_	No*	NOU	provided	Comment#:	\dashv	F	lags Applied
Sample Evaluation	All hits within cal. Range	~	_	T	_	No*			Comment#:	+	$\overline{\Box}$	
	Sample Dilutions	4	-		<u></u>	′es*			Comment#:	7	∐ F	lags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК			Vo*	✓ N/A	S	ee Analysis Below		F	lags Applied
Sample Receipt Summary	No issues noted.											
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL.	ED S	SUM	MA	١RI	ES O	F HOL	D TIMES, (QC ISSUES,			
AND CONFORMANCE.												
Review of field notes (note an	ny deviations from work plan or other anomal	ies t	hat i	nay	bi	as dat	ta):					
No issues noted.				·			,	-	· · · · · · · · · · · · · · · · · · ·			
Field Duplicate Analyis:	Not applicable											

QC Item				Comments
1	EQ detection	ons: Dibromocloromethane	e (J, below RL), Me	thylene chloride (J, below RL), Toluene (J, below RL)
2		eries were above the lim		Dichlorodifluoromethane I action required.
3		ailures were present. All v		ons of the compounds failing.
	Analyses fo		ed compounds, exce	ept where otherwise noted; therefore, acceptable precision
	2			
Overall Data Asses	d in this data r	backage have been validate	ed in accordance wit	h validation criteria presented in the EPA Functional Guidelines for Organic and cound to be representative and quantitative meeting the precision and accuracy of the
		ceptions noted below, if ar		ound to be representative and quantitative meeting the precision and accuracy of the
-				
Data Qualification	s			
Sample II)	Analytes	Qualifier	Reason for Qualification
None		-	-	No additional action required

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI	_							
Semple Delivery Group:	FA 8931R								
ysis Method: 8260E	3-VOLATILES	_	Mat	rix	. C	Water	✓ Soil	Other	
Sample Locations in Batch:		_							
FF	AQUEOUS: NONE								
	AQUEOUS. NONE								
Split Samples NONI									
Quality Control Samples A	ssociated With Batch Field:	PA	REN	ГΒ	ATCH	HAS EQ	& TB		
	Lab:	M	ETHO	DD :	BLAN	KS, LAB	SPIKES, MS	S/MSD, SURROGA	TES
Reviewed by & Date:	LISA HENNESSY 11/4/2013								
Quality Control	D	_				G			
Quanty Control	Requirements						eck Comments)		Flags Applied (see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.					(str QC	Comments		(see comments)
			Ок	Г	7 No*	☐ Not pr	rovided	Comment#:	
	(Case Narrative/Conformance Summary,	-	- 12 13		7110	пос рі	Ovided	Comment#.	
	Results, COC, QC Summaries)	-	1	_	1				
Holding Times (HT)	All samples on COC reported Water	 '	OK OK	+	No*	✓ N/A		Comment#: 1	Flags Applied
inotaing Times (III)	Soil	╁	OK	7		N/A		Comment#: 2	✓ Flags Applied
Containers and Preservation	ns Containers and preservation compliant	1	_	Ī	No*			Comment#:	Flags Applied
Blanks (MB,TB,EB, FB/AB			,						
	Method Blank	1		Ļ	Yes*			Comment#:	_
	Trip Blank Equipment Blank	H	No	┝	Yes*			Comment#: 1	_
(Blank Spike S)	LCS Data Provided	1	No OK	十	Yes*	N/A		Comment#: 1	+
· ' '	Acceptance criteria met	7	ОК	Ī	No*			Comment#:	Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК	L	No*	None*	(The second sections
	Acceptance Limits:	Ļ	ОК		No*			Comment#: 3	Flags Applied
Surrogate Recovery Summa		_	OK	Ļ	No*	Not pr	rovided		Flags Applied
Sample Evaluation	Recovery Limits: All hits within cal. Range	1/	OK OK	누	No*			Comment#:	
Sample Evaluation	Sample Dilutions	1	No	十	Yes*			Comment#:	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	T	ОК	F	No*	✓ N/A	See	Analysis Below	Flags Applied
(42)	Treeston of Marie vo field displicate(s)		,	_			560	Allarysis Below	Tiags Applied
Sample Receipt Summary	NO ISSUES NOTED								
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LED :	SUMI	MA	RIES (OF HOLD	TIMES, QC	ISSUES,	
AND CONFORMANCE.									
Review of field notes (note a	ny deviations from work plan or other anoma	lies t	hat m	ow.	hias d	ata): NON	JE NOTED		
review of field notes (note a	ny deviations from work plan of other anoma	iiies t	пат п	iay	DIAS U	ata): NOI	ENOTED		
Field Duplicate Analyis:	NOT APPLICABLE								

QC Item				<u>Comments</u>
1	This sar	nple was submited originally with	n batch 8931 & t	the VOC analysis was requested on 10/24/2013. The trip
	blank ar	nd EQ blank analysis are validated	d under 8931.	
2	Sample	was run 2 days outside of hold. I	Data should be o	qualified as stated below in the Data Qualification Table.
3	MS/MS	D recoveries were outside QC lin	nits.	
	The lab	oratory case narrative provides de	tailed explanation	ons of the compounds failing.
	Analyse	es for LCS met criteria for failed c	compounds, exce	ept where otherwise noted; therefore, acceptable precision
	and acc	uracy are demonstrated by LCS Q	QC.	
		3		
		×		
	-			
Overall Data Asses	ssment for	Group:		
The results presented	ed in this da	ata package have been validated in	n accordance wit	th validation criteria presented in the EPA Functional Guidelines for Organic and Sound to be representative and quantitative meeting the precision and accuracy of the
		e exceptions noted below, if any.	1999. Data is i	ound to be representative and quantitative meeting the precision and assume, or me
D. (O P. C. Albara	-			
Data Qualification Sample ID		Analytes	Qualifier	Reason for Qualification
A12-4-5		Acetone	J	Analyzed beyond hold time
A12-4-3		Action	,	1 Maiy 200 Coy on a note mint
		ú.		

Project Name & Task:	lean Harbors-Wichita Phase IV RFI										
Sample Delivery Group: FA8931X											
ysis Method: RADI	UM 226 AND 228	_	Ma	trix	:	Water	✓ Soil	Other			
Sample Locations in Batch:		_									
SOIL: A12-4-2, A12-1-10, A12-5-5, A12-4-5, A12-1-2, A12-1-15, A12-4-0.5, A12-1-INT											
Split Samples NONE											
Quality Control Samples As	ssociated With Batch Field:	NO	ONE								
	Lab:		ME	TH	HOD	BLANKS,	LAB SPIKE	S			
Reviewed by & Date:	Kate Fuller 12-2-13										
		_								_	
Quality Control	Requirements						neck			100	lags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	+				(* See QC	Comments)			(!	see comments)
- marage complete (21)	1 m required deriverderes in pag.	15	7 04	г	٦						
	(Case Narrative/Conformance Summary,] OK	L	No	o* Not p	rovided	Comment#:			
	Results, COC, QC Summaries)										
	All samples on COC reported		ОК	·	✓ No			Comment#:	1		
Holding Times (HT)	Water	IL.	OK	-	_ No			Comment#:		Ļ	Flags Applied
Containers and Preservation	Soil Containers and perservation compliant	/		+	No.			C		+	Flags Applied
Blanks (MB,TB,EB, FB/AB)		'	OK		No)*		Comment#:			Flags Applied
(Method Blank	1	No	Т	Ye	s* N//	4	Comment#:			
	Trip Blank		No	Ī	Ye			Comment#:			
	Equipment Blank		No		Ye			Comment#:			
(Blank Spike S)	LCS Data Provided	1	101	L	_ No					$\overline{\Gamma}$	Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	+	OK		- 110			Comment#:	2		- Inago / Applica
1415/1415D	Acceptance Limits:	1	OK	┢	No.		*	Comment#:			Flags Applied
Surrogate Recovery Summa		Ħ	Ток	┢	No		rovidad	Comment.			
Surrogate Recovery Summa	Recovery Limits:	╁╴	ОК	十	No		Iovided	Comment#:			Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК		No			Comment#:		_	
	Sample Dilutions	4	No		Ye	s*		Comment#:		Ш	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		Ок		No	*	See	Analysis Below			Flags Applied
Sample Receipt Summary	NO ISSUES NOTED										
Case Narrative Comments:	REVIEWED AND INCLUDES DETA	ILEI) SUI	MN.	1AR	IES OF HO	LD TIMES,	QC ISSUES,			
AND CONFORMANCE.											
Review of field notes (note a	ny deviations from work plan or other anoma	lies t	hat n	nay	bias	data): NO	NE NOTED)			
Field Duplicate Analyis:	NOT APPLICABLE										
_							·				

QC Item	Comments
1	Samples were collected in the field for future analysis if required and held at the lab.
	Analysis of any held samples are reported separately.
2	LCS recoveries were below the acceptance limits for several Radium 226 and 228 analyses.
	Associated sample results are lab qualified with a "U" and identified as samples with a CalcVal <mdl.< th=""></mdl.<>
	Data should be qualified as stated below in the Data Qualification Table
-	
п	

Overall Data Assessment for Group:

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accuracy of the data quality objectives with the exceptions noted below, if any.

Data Qualifications

Sample ID	Analytes	Qualifier	Reason for Qualification
A12-4-2	Radium-226	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-4-2	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-1-2	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-1-INT	Radium-226	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-1-INT	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-5-5	Radium-226	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-5-5	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-1-15	Radium-226	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-1-15	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI									
Sample Delivery Group: FA9240X										
			Mat	riv	z•	Water	✓ Soil	Other		
			Mai	1 1.	٠.					
Sample Locations in Batch:										
SOIL: S22-	1-0.5, A12-3-0.5									
Split Samples NONE										
Quality Control Samples As	sociated With Ratch Field:	1	NONE	7						
Quanty Control Sumples 115					D C	DIVEC MCA	ACD CLIDE	ACATES		
D. L. II. A.D.	Lab: METHOD B	LAN	NK5,	LA	R 2	PIKES, MS/N	MSD, SUKK	COGATES		
Reviewed by & Date:	Kate Fuller 12-2-13									
Quality Control	Requirements	T				Ch	eck			Flags Applied
						(* See QC	Comments)			(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.									
			Ок		N	o* Not pr	ovided	Comment#:		
	(Case Narrative/Conformance Summary,									
	Results, COC, QC Summaries) All samples on COC reported	\vdash	ОК	Γ.	√ N	o*		Comment#:	1	
Holding Times (HT)	Water	+	OK	Ť		o* ✓ N/A		Comment#:	1	Flags Applied
	Soil	1	-	Ť	_	o* N/A		Comment		✓ Flags Applied
Containers and Preservation	Containers and preservation compliant	1		Ī	N	0*		Comment#:		Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)									
	Method Blank	4	No	L	_	es* N/A		Comment#:	2	
	Trip Blank	1	No	Ļ	_	es* ✓ N/A		Comment#:		
(Blank Spike S)	Equipment Blank LCS Data Provided	 	No	+		es* ✓ N/A	<u> </u>	Comment#:	_	
(blank Spike S)	Acceptance criteria met	1	OK OK	┾	_	0* 0*		Comment#:	3	Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК	十	N			Comment.	3	
	Acceptance Limits:	1	ОК	Ī	N			Comment#:	4	Flags Applied
Surrogate Recovery Summa	ry Method surrogates used		ОК	Γ	N	o* ✓ Not pr	ovided			П
	Recovery Limits:		ОК	T	N			Comment#:	5	Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК		N	0*		Comment#:	6	Class Applied
	Sample Dilutions	1	No			es*		Comment#:	7	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK	L	N	o* ✓ N/A	See	e Analysis Below		✓ Flags Applied
G . I D . I . G	No too too too									
Sample Receipt Summary	NO ISSUES NOTED									
C. N. N. C.	DEVIEWED AND DICKUPES DETAIL	ED.	orn o			30 00 1101 0	mp ma a	a *aa* *=a		
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	ED S	SUMI	MA	1KII	ES OF HOLD	TIMES, QO	C ISSUES,		
AND CONFORMANCE.										
Review of field notes (note a	ny deviations from work plan or other anomal	lies t	hat n	ıav	bia bia	s data): NON	NE NOTED			
· ·										
Field Duplicate Analyis:	NOT APPLICABLE									
			0							

QC Item			<u>Comments</u>
1Th	ese two samples were subcontracted	out by the lab for	specialty analysis. All other compounds on chain of custody are
eva	nluated and reported separately under	9240.	
			E
~			
Overall Data Assessmen		n accordance wit	h validation criteria presented in the EPA Functional Guidelines for Organic and
Inorganic Data Review (O	SWER 9240.1-05A-P) dated Octobe	r 1999. Data is f	bound to be representative and quantitative meeting the precision and accurace of the
data quality objectives wit	th the exceptions noted below, if any.		
Data Qualifications	T		D 0 0 117 11
Sample ID	Analytes	Qualifier	Reason for Qualification
None	-	-	No additional action required

Project Name & Task: Clean Harbors-Wichita Phase IV RFI											
Sample Delivery Group: FA9189											
		-	Mat	:	. T	Water	✓ Soil	Other			
										_	
Sample Locations in Batch:	SOIL: T6-2-20, T6-2-CLAY, T6-2-15, T	6-2-	5, T6-	2 - II), T6-	-2-INT, T6-	·2-2, TB-34				
AQUEOUS: A12-	-1D-CLAYW, A12-1D-LOW										
Split Samples NONE											
Quality Control Samples Associ	iotad With Datah Field.	TD	IP BL	AN							
Quanty Control Samples Associ										—	
	Lab:	<u>M</u>	ETHC)D]	BLAN	VKS, LAB	SPIKES, M	S/MSD, SURRO	GAT	ES	
Reviewed by & Date: Lis	sa Hennessy 11/7/2013										
Quality Control	Requirements					Che	eck				Flags Applied
						(* See QC (Comments)			1	(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.										
	(C)	[~	ok]] No*	Not pro	ovided	Comment#:			
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)										
	All samples on COC reported	\vdash	ОК	V	No*			Comment#:	1	-	
Holding Times (HT)	Water	1	OK		No*	N/A		Comment#:	Ť	П	Flags Applied
	Soil	4	ОК		No*	□ N/A				L	Flags Applied
Containers and Preservations	Containers and preservation compliant	✓	OK		No*			Comment#:		L	Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL) Method Blank	\vdash	No	1	Yes*	- DAL/A	-	Commont#s	2	-	
	Trip Blank	1	=	Ť	Yes*			Comment#:	2		
	Equipment Blank		No	Ī	Yes*			Comment#:			
(Blank Spike S)	LCS Data Provided	1			No*						Flags Applied
MS/MSD	Acceptance criteria met	1		+	No*			Comment#:		L	
1413/14131	Matrix Spikes Provided Acceptance Limits:	~	OK OK	-	No*	None*		Comment#:	2		Flags Applied
Surrogate Recovery Summary	Method surrogates used	\ \ \	-	È	No*	Not pro	ovidad	Comment#.	3		
Surrogute receivery Summary	Recovery Limits:	1		t	No*	Not pro	Jviueu	Comment#:		L	Flags Applied
Sample Evaluation	All hits within cal. Range		ОК	1	No*			Comment#:	4		
	Sample Dilutions		No	1	Yes*			Comment#:	5	L	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK		No*	□ N/A	See	Analysis Below] Flags Applied
C I D I G								¥			
Sample Receipt Summary	NOTHING NOTED			-,							
Case Narrative Comments:	DEVIEWED AND INCLUDES DETAILS	ED (CIDA	4 A T	DIEG.	OF HOLD	TD CC	3 1001 100			
	REVIEWED AND INCLUDES DETAIL	ED S	SUMIN	ΊΑΙ	KIES (OF HOLD	TIMES, QO	CISSUES,			
AND CONFORMANCE.											
Review of field notes (note any d	leviations from work plan or other anomal	ies t	hat m	ay l	bias d	ata): NOT	HING NOT	ΓED			
	a										
Eigld Dumlig-4- A	NOT ADDITION D										
Field Duplicate Analyis:	NOT APPLICABLE										

QC Item	<u>Comments</u>											
1	Geotech and Radium 226 samples are subcontracted out and are validated under FA9189X											
2	All VOC Method blanks are ND.											
3	Some V	OCs required dilutions due to ma	atrix interference	. Details are provided in								
	case narrative. All diluted samples have elevated reporting limits to reflect dilution.											
	No additional qualifications required.											
	110 dddii	ionar quamitumono requires.										
4	MS/MSD failures were present. All were evaluated.											
	The laboratory case narrative provides detailed explanations of the compounds failing.											
	Analyses	s for LCS met criteria for failed of	compounds, exce	ept where noted and addressed in the LCS discussion;								
	therefore	, acceptable precision and accur	acy are demonst	rated by LCS QC.								
5	Sample	A12-1D-LOW had a dection of	TCE above rang	e.								
		has provided a data qualifier of '										
		mas provided a data quantier of	D. Tro uddition	an quantition of the parties of the								
6	6 Some metals required dilutions due to matrix interference. Details are provided in											
	case narr	rative. All diluted samples have	elevated reportion	ng limits to reflect the dilution.								
	No addit	ional qualifications required.										
		6										
Overall Data Asses	ssment for	Group:										
The results presente	d in this dat	a package have been validated in	n accordance wit	th validation criteria presented in the EPA Functional Guidelines for Organic and								
		R 9240.1-05A-P) dated October exceptions noted below, if any.	1999. Data is f	found to be representative and quantitative meeting the precision and accurace of the								
data quanty objectiv	ves with the	exceptions noted below, if any.										
Data Qualification	S											
Sample ID)	Analytes	Qualifier	Reason for Qualification								
None	None No additional action required											
30												

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI	n Harbors-Wichita Phase IV RFI								
Sample Delivery Group:	ery Group: FA9022									
ysis Method: 8260B	-VOCS	_	Ma	trix	: E	✓ Water	✓ Soil	Other		
Sample Locations in Batch:	SOIL: T3-3-CLAY, T5-4-20, T5-4-CLA	– AY, S	Y, S11-3R-10, S11-3R-0.5, S11-3R-15, S11-3R-2, S11-3R-5, TB-28,							
A10-2-R-WT.	A10-2-R-15, A10-2-6-10, A10-2-R-5, A10-2-R								-,	, 20,
			, DI	, D	J-3, D	DG-2, DG-1				
	EQ-6, TO-1, T1-2, T5-4, T3-3									
Split Samples NONE										
Quality Control Samples As	sociated With Batch Field:	TR	IP BI	AN	IK, E(Q BLANK				
	Lab:						SDIKES V	MS/MSD, SURRO	GAT	TC
Reviewed by & Date:	Lisa Hennessy 11/8/2013	101	1111	<i>.</i>	DLAI	NKS, LAD	or ikes, i	VIS/MSD, SURRU	JAI	E5
Reviewed by & Date.	Lisa Heililessy 11/8/2013									
Quality Control	Requirements					Che	eck			Flags Applied
Data Dia Caralia (DD)	A11 : 1.11: 1.1					(* See QC (Comments))		(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.									
	(CNiICC	~	Ок] No*	☐ Not pro	ovided	Comment#:		
	(Case Narrative/Conformance Summary, Results, COC, QC Summaries)									
	All samples on COC reported	-	Ок		No*			Commontill	1	
Holding Times (HT)	Water		OK	十	No*	□ N/A		Comment#:	1	Flags Applied
	Soil	1		T	No*	□ N/A		сопшени.		Flags Applied
Containers and Preservation			ОК	1	No*			Comment#:	6	✓ Flags Applied
Blanks (MB,TB,EB, FB/AB)	,									
	Method Blank		No	L	Yes*			Comment#:		
	Trip Blank	1	1	L	Yes*			Comment#:		
LGS (Blank Spike S)	Equipment Blank LCS Data Provided	+-	No	<u> </u>		N/A		Comment#:	2	
(Diank Spike S)	Acceptance criteria met		OK OK	-	No*			Commontifi	2	✓ Flags Applied
MSD .	Matrix Spikes Provided	1		Ť	No*	None*		Comment#:	3	
	Acceptance Limits:		ОК	7	No*			Comment#:	4	☐ Flags Applied
Surrogate Recovery Summa	ry Method surrogates used	V	ОК		No*	☐ Not pro	ovided			
•	Recovery Limits:	1	ОК		No*		Tiucu	Comment#:		☐ Flags Applied
Sample Evaluation	All hits within cal. Range		ОК	1	No*			Comment#:	5	
	Sample Dilutions	✓	No		Yes*		9 8	Comment#:		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)		ОК		No*	✓ N/A	Se	ee Analysis Below		☐ Flags Applied
Sample Receipt Summary	NO SOLIDS JARS SENT FOR SAMPLE						-2. SAMP	LES WERE CALC	ULA	ATED
USING 100% SOLIDS AND I	NO ADDITIONAL ACTION REQUIRED. SEE	E QC	CON	1MI	ENT#	£1				
Case Narrative Comments:	REVIEWED AND INCLUDES DETAIL	LED S	SUM	MAI	RIES (OF HOLD	TIMES, Q	C ISSUES,	7	
AND CONFORMANCE.										
					9					
Review of field notes (note any deviations from work plan or other anomalies that may bias data): NONE NOTED										
neview of field flotes (flote at	iy deviations from work plan of other anoma	lies t	пацп	ayı	Dias d	iata): NON	E NOTEL)		
Field Duplicate Analyis:	NOT APPLICABLE									
Dupileate Allaiyis.	1101 ATTLICABLE									

QC Item	<u>Comments</u>
1	8260B requires a jar of soil used to calculate the percent solids in the sample. Jars ere not sent for sample A-10-2; therefore,
	it was assumed that there 100% solids. This is acceptable - all other sample collected are in the upper 80 to lower 90%
	which will not affect the outcome of the analytical results.
2	Sample EQ-6 had three VOC compounds detected at low concentrations below reporting limit and greater than MDL.
	Associated results are qualified with a "J," indicating an estimted value. These include bromodichloromethane at 0.78J µg/l,
	chloroform at 0.44J μg/l, and dichlorodifluoromethane at 0.97J μg/l No additional action required.
3	LCS recoveries were above the limits for chloroethane, acetone, dichlorodifluoromethane
	Associated samples were ND, except for T5-4 (Acetone), which is already flagged by lab.
	No additional action required.
	LCS recoveries were below the acceptance limits for 2-chloroethyl vinyl ether, carbon disulfide,
	methyl tert butyl ether
	Data for this compound is qualified with an "R". See Data Qualification table below.
4	Sample collected from T5-4 contained significant headspace. Reported results are considered
	minimum values and qualified below.
5	MS/MSD failures were present. All were evaluated.
ii ii	The laboratory case narrative provides detailed explanations of the compounds failing.
	Analyses for LCS met criteria for failed compounds, except where noted and addressed in the LCS discussion;
	therefore, acceptable precision and accuracy are demonstrated by LCS QC.
6	1,1 DCE is out of range for A10-2-R-wWT - Lab has flagged with "E" - No additional action required
	1,1,1-TCA and PCE out of range for A10-2-R-2 - Lab has provided an "E" flag No additional action required.

Overall Data Assessment for Group:

The results presented in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines for Organic and Inorganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting the precision and accurace of the data quality objectives with the exceptions noted below, if any.

Data Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
T5-4	Acetone, 1,1-DCE	J	headspace in VOA vial
T5-4	All VOCs with detections	a	headspace in VOA vial
T3-3-CLAY	2-chloroethyl vinyl ether	R	No LCS Recovery
T5-4-20	2-chloroethyl vinyl ether	R	No LCS Recovery
T5-4-CLAY	2-chloroethyl vinyl ether	R	No LCS Recovery
S11-3R-10	2-chloroethyl vinyl ether	R	No LCS Recovery
A10-2-R-WT	Carbon Disulfide	R	Low LCS Recovery
A10-2-R-15	methyl tert butyl ether	R	Low LCS Recovery
A10-2-R-5	methyl tert butyl ether	R	Low LCS Recovery
A10-2-R-2	methyl tert butyl ether	R	Low LCS Recovery
A10-2-R-0.5	methyl tert butyl ether	R	Low LCS Recovery

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	FA8967X										
vsis Method: RADI	IUM 226 AND 228	-	Mat	trix	. [Water	✓ Soil	Other			
Sample Locations in Batch		-								_	
_	-5, A12-2-2, S22-1-15, S22-1-2, A12-5-0.5, S22-2	2-5	S22-2	-2	S22-1	I-5 S22-1-	INT \$22-2-IN	NT A12-6-2 A13	2-2-0	. 5	
		- 5, 1	022-2		522-	1-3, 522-1-	111,522-2-11	VI, A12-0-2,A12	2-2-0	1.5	
	2-5, S22-1-10, S22-2-10, S22-2-0.5										
Split Samples											
Quality Control Samples A	ssociated With Batch Field:	NC	ONE								
	Lab: METHO	DD F	BLAN	JKS	S, LA	B SPIKES,	MSMSD, SI	URROGATES			
Reviewed by & Date:	Kate Fuller 12-2-13							50 7 700 D 300 2000-000-000-000-000-000-000-000-000-	-		
<u> </u>		_								_	
Quality Control	Requirements						ieck				Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	-				(* See QC	Comments)		_	-	(see comments)
Data 1 kg Complete (DF)	An required deriverables in pkg.	_	7	_	_						
	(Case Narrative/Conformance Summary,	~	OK No* Not provided Comment#:								
	Results, COC, QC Summaries)										
	All samples on COC reported	Т	ОК	-	No*			Comment#:	1		
Holding Times (HT)	Water		ОК		No*			Comment#:		T	Flags Applied
	Soil	1	ОК		No*	☐ N/A					Flags Applied
Containers and Preservation		<u> </u>	OK		No*			Comment#:		ㅗ	_ Flags Applied
Blanks (MB,TB,EB, FB/AB	B) Detects (> MDL or RL) Method Blank		l Nia	$\overline{}$	Tv	· 🗀		C		1	
	Trip Blank	1	No No	┢	Yes			Comment#:		1	
	Equipment Blank	十	No	十	Yes			Comment#:		1	
(Blank Spike S)	LCS Data Provided	1	ОК		No*		`	Comment.		_	1
	Acceptance criteria met		ОК	~	No*			Comment#:	2	L	_ Flags Applied
MS/MSD	Matrix Spikes Provided	1	ОК	L	No*		*	15		$\lceil - \rceil$	Flags Applied
	Acceptance Limits:	\ <u>\</u>	OK	上	No*	_		Comment#:			
Surrogate Recovery Summa		Ļ	ОК	누	No*	✓ Not p	rovided			Г	Flags Applied
Sample Evaluation	Recovery Limits: All hits within cal. Range	<u> </u>	OK	十	No*			Comment#:		_	
Sample Evaluation	Sample Dilutions	4	OK No	┾	No*			Comment#: Comment#:			Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	F	ok	F	No*		See	Analysis Below		Г	Flags Applied
reta Dapheate (1D)	recision of native vs field duplicate(s)		JOK]110	L IVA	366	Allalysis Below			_ riags Applied
Sample Receipt Summary	NO ISSUES NOTED										

Case Narrative Comments:	REVIEWED AND INCLUDES DETAI	LEC	SUN	ИM	ARII	ES OF HO	LD TIMES,	QC ISSUES,			
AND CONFORMANCE.											
3											
Review of field notes (note a	any deviations from work plan or other anomal	ioc t	hat m	NOW.	hios	data): NO	NE NOTED				
ate the to the land to the to	ing deviations from work plan of other anomal	ics ti	пас п	iay	DIAS	uata). INO	NE NOTED				
Field Duplicate Analyis:	NOT APPLICABLE						-				
-											
										_	

QC Item	Comments												
1	Samples were collected in the field for future analysis if required and held at the lab.												
	Analysis of any held samples are reported separately.												
2	LCS recoveries were below the acceptance limits for several Radium 226 and 228 analyses.												
	Associated sample results are lab qualified with a "U" and identified as samples with a CalcVal <mdl.< td=""></mdl.<>												
-	Data should be qualified as stated below in the Data Qualification Table												
,													
-													
OII Data Ass	and the Canada												
	essment for Group:												
for Organic and It	nted in this data package have been validated in accordance with validation criteria presented in the EPA Functional Guidelines norganic Data Review (OSWER 9240.1-05A-P) dated October 1999. Data is found to be representative and quantitative meeting												
the precision and	accurace of the data quality objectives with the exceptions noted below, if any.												

Data Qualifications

Sample ID	Analytes	Qualifier	Reason for Qualification
DUP-122	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-2-0.5	Radium-226	U	Sample with a CalcVal <mdl< td=""></mdl<>
DUP-121	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-2-5	Radium-226	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-2-5	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A22-2-0.5	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>
A12-5-5	Radium-228	U	Sample with a CalcVal <mdl< td=""></mdl<>

			_							-
Project Name & Task: Clea	n Harbors-Wichita Phase IV RFI									
Sample Delivery Group: 6015	9805	20								
ysis Method: 8260B		•	Matri	x:	Water	✓ Soil	Other			
Sample Locations in Batch:	S20-3-10, S20-3-15, S20-3-20, S20-2-10,	•)-2-20 S18-	10-5 A12-9-5	5. A12-9-10. A12-	9-15	5. /	12-9-20
•	-15, A12-8-20, A12-10-5, A12-10-10, A12-								, -	
	-13, A12-0-20, A12-10-3, A12-10-10, A12-	-10-1	3, 711	2-10	5-20, 510-12	-13, 1112 7 3,	, 1112 / 10,			
A12-7-15, A12-7-20										
Split Samples NONE										
Quality Control Samples Associa						BLANK				
	Lab:				METHOL	BLANKS, L	AB SPIKES			
Reviewed by & Date: Lisa	Hennessy 01-10-2013									
Quality Control	Requirements		_			Check				Flags Applied
	-				(* See Q	C Comments)				(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.	_								
	(Case Narrative/Conformance Summary,	Ш	OK	√	No* Not	provided	Comment#:	1		
	Results, COC, QC Summaries)							•		
	All samples on COC reported		OK		No*		Comment#:			
Holding Times (HT)	Water Soil	_	OK	_	No* ✓ N/		Comment#:		H	Flags Applied Flags Applied
Containers and Preservations	Containers and perservation compliant		OK OK		No*	Α	Comment#:	2	H	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)								<u> </u>	
	Method Blank		No			N/A	Comment#:			
	Trip Blank Equipment Blank		No No	$\overline{}$	Yes*	N/A N/Δ	Comment#: Comment#:			
(Blank Spike S)	LCS Data Provided		OK		No*	4/11	Comment.		Г	
	Acceptance criteria met		OK		No*		Comment#:	3	L	Flags Applied
MS/MSD	Matrix Spikes Provided Acceptance Limits:		OK OK		No* ☑ Noi No*	ne*	Comment#:			Flags Applied
Surrogate Recovery Summary	Method surrogates used	=	OK	=		provided	Comment#.		_	
Surrogate Recovery Summary	Recovery Limits:		OK	$\overline{}$	No*	. provided	Comment#:		L	Flags Applied
Sample Evaluation	All hits within cal. Range	1	OK	$\overline{}$	No*		Comment#:		Г	Flags Applied
	Sample Dilutions		No		Yes*		Comment#:	4		_
Field Duplicate (FD)	Precision of native vs field duplicate(s)	Ш	OK	Ц	No* ✓ N/A	A Sec	e Analysis Below		L	Flags Applied
Sample Receipt Summary	No issues other than temp noted.									
			7.							
Case Narrative Comments:	Cover letter provided with a brief stat	teme	ent of	con	formance t	o lab QA/Q0	C manual.			
Review of field notes (note any d	eviations from work plan or other anoma	alies	that	nay	bias data):	NONE NOT	ED			
Field Duplicate Analysis	NOT APPLICABLE									
Field Duplicate Analyis:	NOT ATTLICABLE									
			-							
		_								

QC Item				<u>Comments</u>					
1	Cover	letter provided with a brief s	tatement of cor	nformance to lab QA/QC manual.					
2	Sample	es were received outside requ	ired temepera	ture; however, samples were hand delivered same day as					
	sample	ed and arrived at the laborato	ory within hou	rs of collection and ice was present in the cooler. The samples					
	were analyzed immediately. No additional action required.								
3	There	were seven compounds that f	ailed the LCS	criteria on the high side. In each instance the associated					
	samples were reported as non-detect. Laboratory has flagged all instances. No additional action needed.								
4	All dil	uted samples have elevated r	enorting limits	to reflect the dilution					
	4 All diluted samples have elevated reporting limits to reflect the dilution. No additional action required.								
		1							
				·					
OII Data A		' C							
Overall Data Asses		_	idated in accor	dance with validation criteria presented in the EPA Functional Guidelines					
				October 1999. Data is found to be representative and quantitative meeting					
the precision and a	ccuracy	of the data quality objectives	with the excep	tions noted below, if any.					
Data Qualification	 1S								
Sample ID		Analytes	Qualifier	Reason for Qualification					
None									
				1					

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	60159929	-									
	and 6010	-	Mat	riv.	Г	Water	✓ Soil	Other			
Sample Locations in Batch:		- Δ10							15	<u> </u>	0.6.20
Sample Locations in Batch: A10-9-5, A10-7-2, A10-7-5, A10-7-10, A10-7-15, A10-7-20, A10-6-2, A10-6-5, A10-6-10, A10-6-15, A10-6-20, S25-3-5, S25-3-10, S25-3-15, S25-3-20, S11-6-5, S11-5-15, BC-5-5, BC-5-10, BC-5-15, BC-5-20											
523-3-3, 523-3-10, 52	25-5-15, 825-5-20, 811-6-5, 811-5-15, BC-5-5,	BC-	5-10,	BC.	-3-13,	, BC-5-20					
Split Samples NONE											
7											
Quality Control Samples As	ssociated With Batch Field:					TRIP B	SLANK				
	Lab:			ME	ETHC	DD BLAN	KS, LABS	PIKES, MS/MSI)		
Reviewed by & Date:	Lisa Hennessy 01-10-2013							, ,			
Quality Control	Dogwinoments	=				Cl					
Quality Control	Requirements						eck Comments)				Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	_				(see QC	Comments)			\vdash	(see comments)
			lok	[./] No*	☐ Not pr	ovide d	C			
	(Case Narrative/Conformance Summary,	-	JOK] IAO	☐ NOT pr	ovided	Comment#:	1		
	Results, COC, QC Summaries)	_	_		_						
II II: T' (III)	All samples on COC reported	1		_	No*			Comment#:		_	
Holding Times (HT)	Water Soil	-	OK OK	┾	No*	✓ N/A		Comment#:		ļĻ	Flags Applied
Containers and Preservation		1	_	十	No*	∐ N/A		Comment#:		H	Flags Applied Flags Applied
Blanks (MB,TB,EB, FB/AB)			JOK		1110			Comment.		_	riags Applied
	Method Blank	1	No		Yes*	N/A		Comment#:			
	Trip Blank	1	No		Yes*			Comment#:			
(D) 1 S (1 S)	Equipment Blank	H	No	Ļ	Yes*	✓ N/A		Comment#:			
(Blank Spike S)	LCS Data Provided Acceptance criteria met	'	OK OK	<u> </u>	No*			Commontile	2	E	✓ Flags Applied
MS/MSD	Matrix Spikes Provided	1	_	۴	No*	None*	:	Comment#:			
	Acceptance Limits:		ОК	7	1			Comment#:	3	L	_ Flags Applied
Surrogate Recovery Summa	Method surrogates used	4	Ок		No*	Not pr	ovided			Г	7
	Recovery Limits:	4	ОК		No*	•		Comment#:		L	Flags Applied
Sample Evaluation	All hits within cal. Range	~	ОК		No*		9	Comment#:		Г	Flags Applied
	Sample Dilutions	Ļ	No		1 1 63			Comment#:	4		
Field Duplicate (FD)	Precision of native vs field duplicate(s)		OK	L	No*	✓ N/A	Sec	e Analysis Below		L	Flags Applied
Sample Receipt Summary	NO ISSUES NOTED										
	110 1000 10 110 120										
Case Narrative Comments:	Cover letter provided with a brief stat	tem	ent of	co	nforn	nance to la	ab QA/Q0	C manual.			
Review of field notes (note a	ny deviations from work plan or other anoma		that		v bio	data). NI	ONE NOT	ED			
Review of field notes (note a	my deviations from work plan of other anoma	mes	шац	ma _.	y Dias	s data): No	ONE NOT	ED			
Field Duplicate Analyis:	NOT APPLICABLE										

2 The	ere were 4 compounds that failed	d the LCS criteri	ia on the high side. In three instances the associated								
san	nples were reported as non-detec	ct and no additi	onal action needed. Data qualifiers are needed for the positive								
det	detections of sec-butylbenzene as they may be biased high. See Table below.										
	MS/MSD failures were present. All were evaluated.										
An	Analyses for LCS met criteria for failed compounds, except where otherwise noted; therefore, acceptable precision										
and	and accuracy are demonstrated by LCS QC.										
4 On	Only one sample(S11-5-15) required dilution for one parmeter (PCE) and the detection limit has been elevated										
	reflect the dilution. No additiona										
			·								
Ownell Data Assessme	and for Crount										
Overall Data Assessment The results presented in		lidated in accor	dance with validation criteria presented in the EPA Functional Guidelines								
for Organic and Inorgan	nic Data Review (OSWER 9240.1	-05A-P) dated (October 1999. Data is found to be representative and quantitative meeting								
the precision and accur	acy of the data quality objectives	with the excep	tions noted below, if any.								
Data Qualifications											
Sample ID	Analytes	Qualifier	Reason for Qualification								
BC-5-15	sec-Butylbenzene	J	High recovery of compound in the laboratory control spike.								

Comments

Cover letter provided with a brief statement of conformance to lab QA/QC manual.

QC Item

1

Project Name & Task: C	lean Harbors-Wichita Phase IV RFI	_									
Sample Delivery Group: 60	0160065										
ysis Method: 8260B		•	Mat	rix	. [] Water	✓ Soil	Other			
Sample Locations in Batch: SEBJ-6-15, SEBJ-5-15, DC-29-15, DC						114705				_	
Sample Locations in Batch.	3EBJ-0-13, 3EBJ-3-13, DC-29-13, DC-	30-1	10, 10	J - J	1-15, 5	014-7-0.5				_	
Split Samples NONE											
Quality Control Samples Asso	ciated With Batch Field:					TRIP B	LANK				
	Lab:				ME	THOD BI	LANKS, L	LAB SPIKES			
Reviewed by & Date: Li	isa Hennessy 01-10-2013						, mar 44400 40000000000 2 3000				
Quality Control	Requirements					Che				1	Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.	\vdash			((* See QC (Comments)			_	(see comments)
Duta 1 ng complete (D1)	m required denvertables in pkg.	_]ок	Г	7	п.		~ "			
	(Case Narrative/Conformance Summary,		JOK	7	_l No*	Not pro	ovided	Comment#:	1		
	Results, COC, QC Summaries)		_								
H.H. T. AIT.	All samples on COC reported	1		+	No*			Comment#:		Ļ	
Holding Times (HT)	Water Soil	1	OK OK	┾	No*	✓ N/A N/A		Comment#:		ŀ	Flags Applied Flags Applied
Containers and Preservations	Containers and perservation compliant	1	OK	十	No*	L N/A		Comment#:		十	Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)		10.0							_	_ riago / Applica
	Method Blank		No		Yes*	☐ N/A		Comment#:			
	Trip Blank	¥	No	+	Yes*	N/A		Comment#:		-	
(Blank Spike S)	Equipment Blank LCS Data Provided	1	No OK	┾	Yes* No*	✓ N/A		Comment#:		_	_
(Same spine s)	Acceptance criteria met	Ħ	OK	7	1			Comment#:	2	L	Flags Applied
MS/MSD	Matrix Spikes Provided		ОК	Ī	No*	✓ None*				Г	
	Acceptance Limits:	L	ОК		No*			Comment#:		L	Flags Applied
Surrogate Recovery Summary		1	ОК	Ļ	No*	Not pro	ovided			Г	Flags Applied
Sample Evaluation	Recovery Limits: All hits within cal. Range	1	OK	누	No*			Comment#:		_	
Sample Evaluation	Sample Dilutions	1	OK No	十	No* Yes*			Comment#:			Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	Ħ	ОК	T		✓ N/A	Sec	e Analysis Below		Г	Flags Applied
(Treeseast of harry ve here duphedic(s)						500	e 7 mary 513 Delow			
Sample Receipt Summary	NO ISSUES NOTED										
Case Narrative Comments:	Cover letter provided with a brief stat	teme	ent o	f co	nform	nance to la	b QA/QC	C manual.			
Review of field notes (note any	deviations from work plan or other anoma	alies	that	ma	y bias	data): NO	ONE NOT	ED			
								-			
Field Duplicate Analyis:	NOT ADDITE ADI E										
- Analyss:	NOT APPLICABLE										
_											

QC Item			Comments
1Cc	over letter provided with a brief s	tatement of cor	formance to lab QA/QC manual.
2Th	ere were five compounds that fai	iled the LCS cri	teria on the high side. In each instance the associated
sa	mples were reported as non-detec	ct. Laboratory	has flagged all instances. No additional action needed.
Overall Data Assessm	_	l' 1 - (- 1	Annual with well-deline with a managed in the EDA Europional Cuidalines
for Organic and Inorga	n tnis data package nave been val inic Data Review (OSWER 9240.1	-05A-P) dated (dance with validation criteria presented in the EPA Functional Guidelines October 1999. Data is found to be representative and quantitative meeting
	racy of the data quality objectives		
	4		
Data Qualifications	T	T	D (O 110 11
Sample ID	Analytes	Qualifier	Reason for Qualification
None			-

				_						
Project Name & Task: Clea	an Harbors-Wichita Phase IV RFI	_								
Sample Delivery Group: 60160696										
			Mat	riv.	Г	Water	✓ Soil	Other		
ysis Method: 8260B		-	Mai	ı ıx.	_	acc.				
Sample Locations in Batch:	SEBJ-8-10, A10-16-5, SEBJ-11-10									
Split Samples NONE										
O	and With Datch Field.	-	_			TDID	BLANK			
Quality Control Samples Associ					7771.10			PHATE NO AND		
	Lab:			MI	ETHO	D BLAN	KS, LABS	SPIKES, MS/MSI		
Reviewed by & Date: Lisa	1 Hennessy 01-10-2013									
Quality Control	Requirements			_		Ch	eck			Flags Applied
Quanty control	Acquirements						Comments)			(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.									
			ОК	1	No*	☐ Not pr	ovided	Comment#:		
	(Case Narrative/Conformance Summary,								1	
	Results, COC, QC Summaries) All samples on COC reported		ОК	Т] No*			Comment#:		
Holding Times (HT)	Water	H	OK	+	No*	✓ N/A		Comment#:		Flags Applied
and the control of th	Soil	7	ОК	Ī	No*	□ N/A		Comment.		Flags Applied
Containers and Preservations	Containers and perservation compliant		ОК	1	No*			Comment#:	2	Flags Applied
Blanks (MB,TB,EB, FB/AB)	Detects (> MDL or RL)		1	_	,					
	Method Blank		No	÷	Yes*			Comment#:		
	Trip Blank Equipment Blank	1	No No	十	Yes*			Comment#:		
(Blank Spike S)	LCS Data Provided	1	ОК	T	No*			сопинения.		
	Acceptance criteria met	~	ОК	Ī	No*			Comment#:		Flags Applied
MS/MSD	Matrix Spikes Provided	4	ОК	L	No*	☐ None ³	k			Flags Applied
	Acceptance Limits:	Ļ	OK	-	7 110			Comment#:	3	riags Applica
Surrogate Recovery Summary	Method surrogates used	1	OK	누	No*	Not p	rovided	0		Flags Applied
Sample Evaluation	Recovery Limits: All hits within cal. Range	7	OK OK	十	No*			Comment#:		
Sample Evaluation	Sample Dilutions	7	_	F	Yes*			Comment#:		Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	Ī	ОК	Ī	No*	✓ N/A	Se	e Analysis Below		Flags Applied
2.0.0 2 4 5.1000 (2.2.)	a received of many ever another authorities (c)							or i mary sid Below		
Sample Receipt Summary	No issues other than temp noted.									
Case Narrative Comments:	Cover letter provided with a brief state	tem	ent o	f co	nforn	nance to l	ab QA/Q	C manual.		
Review of field notes (note any d	leviations from work plan or other anom:	alies	that	ma	v bias	s data): N	ONE NO	ΓED		
	F				J					
		-	-	-						
							3			
Field Duplicate Analyis:	NOT APPLICABLE									

QC Item				Comments
1	Cover	letter provided with a brief st	atement of cor	nformance to lab QA/QC manual.
2	Sampl	es were received outside requ	ired temepera	ture; however, samples were hand delivered same day as
	sample	ed and arrived at the laborato	ry within hour	rs of collection and ice was present in the cooler. The samples
	were a	analyzed immediately. No ad	lditional actior	n required.
3	MS/M	ISD failures were present. All	were evaluate	ed.
	Analys	ses for LCS met criteria for fai	led compound	s, except where otherwise noted; therefore, acceptable precision
	and ac	curacy are demonstrated by I	.CS QC.	
	N			
Overall Data Asse	essment	for Group:		
				dance with validation criteria presented in the EPA Functional Guidelines
				October 1999. Data is found to be representative and quantitative meeting
the precision and a	accuracy	of the data quality objectives	with the excep	tions noted below, if any.
Data Qualification	ns			
Sample ID		Analytes	Qualifier	Reason for Qualification
None				-
L				

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI								
Sample Delivery Group:	60160815	ā							
vsis Method: 8260B		Ma	trix:	Water	✓ Soil	Other			
Sample Locations in Batch:	Soil: S11-18-15, DC-33-10, S14-13-15	•						_	
Sample Locations in Daten.	5011. 511-10-15, DC-55-10, 514-15-15								
Split Samples NONE									
Quality Control Samples As	ssociated With Batch Field:			TRIP I	BLANK				
	Lab:			METHOD I	BLANKS, L	AB SPIKES			
Reviewed by & Date:	Lisa Hennessy 01-10-2013								
Quality Control	Requirements			C	heck				Flags Applied
Quanty Control	Requirements				Comments)			1	(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.							Т	(00000000000)
		□ок	7	No* Not p	rovided	Comment#:			
	(Case Narrative/Conformance Summary,			лио 🗀 могр	Toviaca	Comment.	1		
	Results, COC, QC Summaries)							L	
H II. T. (HT.)	All samples on COC reported	✓ OK	+	No*		Comment#:	_	╀	Te
Holding Times (HT)	Water Soil	∐oк ✓oк	누	No*		Comment#:		┼	Flags Applied Flags Applied
Containers and Preservation		ОК	1			Comment#:	2	十	Flags Applied
Blanks (MB,TB,EB, FB/AB)		ok		_110		Committee.	_	_	
	Method Blank	✓ No		Yes* N/	A	Comment#:			
	Trip Blank	✓ No	L	Yes* N/		Comment#:			
	Equipment Blank	No.		Yes* ✓ N/	A	Comment#:		_	
(Blank Spike S)	LCS Data Provided Acceptance criteria met	✓ ok		No*		Comment#:	3		Flags Applied
MS/MSD	Matrix Spikes Provided	ОК	1		. *	Comment#.	3	_	_
	Acceptance Limits:	ОК	7		, 	Comment#:		L	Flags Applied
Surrogate Recovery Summa		√ ок			rovided			_	7
g,	Recovery Limits:	√ ок		No*		Comment#:		L	_ Flags Applied
Sample Evaluation	All hits within cal. Range	✓ oĸ		No*		Comment#:		Г	Flags Applied
	Sample Dilutions	✓ No		Yes*		Comment#:		_	
Field Duplicate (FD)	Precision of native vs field duplicate(s)	OK		No* ✓ N/A	See	Analysis Below		L	Flags Applied
Sample Receipt Summary	No issues other than temp noted.								
Sumpre Accorpt Summary	The issues office than temp notes.								
Case Narrative Comments:	Cover letter provided with a brief state	tement (of co	nformance to	lab QA/QC	manual.			
<u> </u>									
Review of field notes (note a	ny deviations from work plan or other anom:	alies tha	t ma	y bias data): N	IONE NOTI	ED			
Field Duplicate Analyis:	NOT APPLICABLE								
	, , , , , , , , , , , , , , , , , , ,								
							-		

QC Item				<u>Comments</u>
1	Cover	letter provided with a brief st	atement of cor	nformance to lab QA/QC manual.
		* ***		
2	Sample	es were received outside requ	ired temeperat	ture; however, samples were hand delivered same day as
	sample	ed and arrived at the laborator	ry within hour	rs of collection and ice was present in the cooler. The samples
		nalyzed immediately. No ad		-
3	LCS%r	ec is high for carbon disulfide	e, chlorometha	ne, and dichlorodifluoromethane.
	Howev	ver, these three compounds w	ere all reporte	d as non-detect eliminating the high bias. No additional
		required.	*	<u> </u>
	uction	requirem		
			<u> </u>	
		8		
				*
_				
Overall Data Asses	sment f	or Group:		
				dance with validation criteria presented in the EPA Functional Guidelines
				October 1999. Data is found to be representative and quantitative meeting
the precision and ac	ccuracy	of the data quality objectives	with the excep	dions noted below, if any.
Data Qualifications	s			
Sample ID		Analytes	Qualifier	Reason for Qualification
None				ŀ

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI		
Sample Delivery Group:	60159167	•	
ysis Method: 8260B		Matrix: ✓ Water ✓ Soil Other	
Sample Locations in Batch:		-	•
Sample Locations in Datch.			
	Aqueous: JC-1		
1			
Split Samples NONE			
Ouality Control Samples A	ssociated With Batch Field:	TRIP BLANK	
Quanty Control Sumples 12	Lab:	METHOD BLANKS, LAB SPIKES	
		METHOD BLANKS, LAB SPIKES	
Reviewed by & Date:	Lisa Hennessy 01-10-2013		
Quality Control	Requirements	Check	Flags Applied
		(* See QC Comments)	(see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.		
		OK No* Not provided Comment#:	
0	(Case Narrative/Conformance Summary,		1
	Results, COC, QC Summaries) All samples on COC reported	✓ OK No* Comment#:	
Holding Times (HT)	Water	V OK No* N/A Comment#:	Flags Applied
and the control of th	Soil	✓ OK No* N/A	Flags Applied
Containers and Preservatio	ns Containers and perservation compliant	✓ OK No* Comment#:	Flags Applied
Blanks (MB,TB,EB, FB/AB			
	Method Blank	✓ No Yes* N/A Comment#:	
_	Trip Blank	✓ No Yes* N/A Comment#:	
(Blank Spike S)	Equipment Blank LCS Data Provided	No Yes* VN/A Comment#:	
(Diam's spine s)	Acceptance criteria met	✓ OK No* Comment#:	Flags Applied
MS/MSD	Matrix Spikes Provided	OK No* None*	
	Acceptance Limits:	OK No* Comment#:	Flags Applied
Surrogate Recovery Summa		OK No* Not provided	Flags Applied
	Recovery Limits:	✓ OK No* Comment#:	
Sample Evaluation	All hits within cal. Range	OK No* Comment#:	Flags Applied
E' II D. I' (ED)	Sample Dilutions	No Yes* Comment#:	
Field Duplicate (FD)	Precision of native vs field duplicate(s)	OK No* N/A See Analysis Below	Flags Applied
Sample Receipt Summary	NO ISSUES NOTED		
Sample Receipt Summary	110 130013 110 1115		
Case Narrative Comments:	Cover letter provided with a brief stat	tement of conformance to lab QA/QC manual.	
		2-7 2	
Review of field notes (note a	any deviations from work plan or other anoma	alies that may bias data): NONE NOTED	
	_		
Field Dunliests A 1	NOT ADDITO ADI E		
Field Duplicate Analyis:	NOT APPLICABLE		

OC Item			Comments
1 Cover	letter provided with a brief st	atement of cor	aformance to lab QA/QC manual.
1			
Organia II Data Assassament	for Crossn		
Overall Data Assessment The results presented in th		idated in accor	dance with validation criteria presented in the EPA Functional Guidelines
			October 1999. Data is found to be representative and quantitative meeting
	of the data quality objectives		
D . O . W			
Data Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
None			-
	ė.		

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI										
Sample Delivery Group:	60160751	-									
	00100701	-	3.6		Г	Water	✓ Soil	Other			
ysis Method: 8260B		-	Mat			water	<u>S011</u>	U Other		_	
Sample Locations in Batch:	Soil: S11-16-10, S11-15-15, S18-20-15,	and	S11-	14-1	.5						
	Aqueous: None										
Split Samples NONE						,					
										_	
Quality Control Samples As	sociated With Batch Field:					TRIP B	SLANK				
	Lab:				M	ETHOD B	LANKS, L	AB SPIKES			
Reviewed by & Date:	Lisa Hennessy 01-10-2013										
Quality Control	Requirements					Ch	a alı			=	El A I'1
Quanty Control	Requirements						eck Comments)				Flags Applied (see comments)
Data Pkg Complete (DP)	All required deliverables in pkg.					(see QC	Comments)				(see comments)
	1 3		lok	<u>[,</u>	7 No*	☐ Not pr	مريناط مط	0 4//			
	(Case Narrative/Conformance Summary,	-	JOK] MO™	□ Not pr	ovidea	Comment#:	1		
	Results, COC, QC Summaries)										
TT 111 771 7770	All samples on COC reported	1	ОК		No*	-		Comment#:		L	
Holding Times (HT)	Water Soil	 	OK	┾	No*	✓ N/A		Comment#:		ļ	Flags Applied
Containers and Preservation		1	OK OK	-	No*	∐ N/A		Comment#:	2	╬	Flags Applied
Blanks (MB,TB,EB, FB/AB)		-	JOK	ľ] INO**	,		Comment#:		┝	Flags Applied
, , , , , , , , , , , , , , , , , , , ,	Method Blank	1	No	T	Yes*	k □ N/A		Comment#:			
	Trip Blank		1		Yes*	-		Comment#:			
	Equipment Blank		No		Yes*	^k ✓ N/A		Comment#:			
(Blank Spike S)	LCS Data Provided	1		+	No*					Г	Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	\ <u>'</u>	1010	+,	No*			Comment#:		_	
1415/1415 <i>D</i>	Acceptance Limits:	\vdash	OK OK	_	No*	None*		Comment#:			Flags Applied
Surrogate Recovery Summa		1	ок	F	No*	Not pr	rovidod	Comment.			_
Surrogate Recovery Summa	Recovery Limits:	1	OK	十	No*	иос рг	ovided	Comment#:		L	Flags Applied
Sample Evaluation	All hits within cal. Range	1	ОК	十	No*			Comment#:		_	
	Sample Dilutions	7	No		Yes*	:		Comment#:		L	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)] ок] No*	✓ N/A	See	Analysis Below			Flags Applied
Sample Receipt Summary	No issues other than temp noted.										
S											
Case Narrative Comments:	Cover letter provided with a brief stat	eme	ent of	f co	nforn	nance to la	ab QA/QC	manual.			
Review of field notes (note a	ny deviations from work plan or other anoma	lies	that	ma	v bias	s data): No	ONE NOT	ED			
`					,						
										_	
Field Duplicate Analyis:	NOT APPLICABLE										

QC Item			<u>Comments</u>				
1 Cover	letter provided with a brief sta	atement of con	formance to lab QA/QC manual.				
2 Sampl	Samples were received outside required temeperature; however, samples were hand delivered same day as						
sampled and arrived at the laboratory within hours of collection and ice was present in the cooler. The samples							
were	analyzed immediately. No ad	ditional action	required.				
3 LCS%	rec is high for carbon disulfide	and dichloro	diffuoromethane				
			as non-detect eliminating the high bias. No additional				
And the same of th		ie ali reporteu	as non-detect emiliating the riigh bias. Two additional				
<u>action</u>	required.						
Overall Data Assessment	•						
			dance with validation criteria presented in the EPA Functional Guidelines				
	Oata Review (OSWER 9240.1-1 of the data quality objectives		October 1999. Data is found to be representative and quantitative meeting				
the precision and accuracy	of the data quanty objectives	with the excep	tions noted below, it unity.				
Data Qualifications							
Sample ID	Analytes	Qualifier	Reason for Qualification				
None							

Project Name & Task:	Clean Harbors-Wichita Phase IV RFI							X .
Sample Delivery Group:	60162858	_						
ysis Method: 8260B		– Mat	rix:	Wa	ater 🗸 S	Soil Other		
Sample Locations in Batch:	Soil: S14-13-5, S14-13-10, S14-13-15, S	_				0000 M 00	C11 1	15.5.014.15.10
1								
), S14-16-5, S14-16-10, S14-16-15, S14-16-20,					4-17-20, NBJ-S-5, N	BJ-2	-10, NBJ-2-15
,	NBJ-3-10, NBJ-3-15, NBJ-3-20, NBJ-4-5, NBJ-4	4-10, NBJ	-4-15,	NBJ-4	-20			
Split Samples NONE								
Quality Control Samples As	ssociated With Batch Field:			T	RIP BLANK	(
	Lab:		METI	HOD B	BLANKS, LA	AB SPIKES, MS/MS	D SD	
Reviewed by & Date:	Lisa Hennessy 01-10-2013				,	, ,	_	
Ouglite Control	D .							
Quality Control	Requirements			(+ C.	Check	4.)		Flags Applied
Data Pkg Complete (DP)	All required deliverables in pkg.		-	(* 56	ee QC Comme	nts)	+	(see comments)
. ,	1 F8.	Пок						
	(Case Narrative/Conformance Summary,		<u> </u>	0* []	Not provided	Comment#:	1	
	Results, COC, QC Summaries)							
H-H: T' (HT)	All samples on COC reported	✓ OK		0*		Comment#		
Holding Times (HT)	Water Soil	✓ OK			N/A	Comment#	:	Flags Applied
Containers and Preservation		✓ OK		o*	N/A	Comment#:	+	Flags Applied
Blanks (MB,TB,EB, FB/AB)		U OK	IN	0		Comment#	+	Flags Applied
	Method Blank	✓ No	Ye	es*	N/A	Comment#:	:	
	Trip Blank	✓ No		es*	N/A	Comment#:	-	
	Equipment Blank	No	Ye	es*	✓ N/A	Comment#:	:	-
(Blank Spike S)	LCS Data Provided	✓oĸ	☐ No					Flags Applied
MS/MSD	Acceptance criteria met Matrix Spikes Provided	✓ OK	∐ No			Comment#:	_	riags Applied
1413/141312	Acceptance Limits:	✓ OK	U No		None*	Comment#:	2	Flags Applied
Surrogate Recovery Summa		 ОК	□ No		Not provided	Comment#.	-	
Surregue Accovery Summa	Recovery Limits:	✓ OK	No		Not provided	Comment#:	-	Flags Applied
Sample Evaluation	All hits within cal. Range	✓ OK	No			Comment#:		
17	Sample Dilutions	✓ No	=	es*		Comment#:	_	Flags Applied
Field Duplicate (FD)	Precision of native vs field duplicate(s)	Ок	☐ No	* 🗸 I	N/A	See Analysis Below		Flags Applied
Sample Receipt Summary	No issues other than temp noted.	-						
C. N. C.					Jun 18			
Case Narrative Comments:	Cover letter provided with a brief stat	tement of	confo	rmanc	e to lab QA,	/QC manual.		
Review of field notes (note an	ny deviations from work plan or other anoma	alies that	mav bi	ias dat:	a): NONE N	IOTED		
			•					
Field Duplicate Analyis:	NOT APPLICABLE							

OC Item			<u>Comments</u>
1 0	over letter provided with a brief sta	tement of con	formance to lab QA/QC manual.
	IS/MSD failures were present. All		
A	nalyses for LCS met criteria for faile	ed compounds	s, except where otherwise noted; therefore, acceptable precision
a	nd accuracy are demonstrated by LC	CS QC.	
	a a		
Overall Data Assess	nent for Group:		
The results presented	in this data package have been vali	dated in accor	dance with validation criteria presented in the EPA Functional Guidelines
for Organic and Inorg	ganic Data Review (OSWER 9240.1-1	05A-P) dated (October 1999. Data is found to be representative and quantitative meeting
the precision and acc	uracy of the data quality objectives	with the excep	dons noted below, if any.
Data Qualifications			
Sample ID	Analytes	Qualifier	Reason for Qualification
None			
Tteric			

APPENDIX E

SITE RADIOLOGICAL SCOPING SURVEY, USA ENVIRONMENT, L.P.



SITE RADIOLOGICAL SCOPING SURVEY

September 2013 Clean Harbors (Reid Supply) Facility Wichita, KS

USA Environment LP

10234 Lucore St Houston, TX 77017

Project ID # 2950-NR-H026

TABLE OF CONTENTS

1.0	INTRODUCTION
1907 1909	
2.0	RADIOLOGICAL SURVEY AND SAMPLING
	2.2 SURVEY SENSITIVITIES, DETECTION LIMITS AND FIELD
	INSTRUMENTATION
	2.3 SOIL SAMPLING
3.0	SURVEY AND SAMPLING RESULTS
4.0	DISCUSSION
5.0	CONCLUSIONS

APPENDICES

Appendix I	SURVEY MAP WITH GAMMA DATA
Appendix II	ANALYTICAL DATA FOR SOIL SAMPLING
Appendix III	EXPOSURE RATE TO CPM CORRELATION DATA
Appendix IV	LICENSING DOCUMENTATION FOR USA ENVIRONMENT LP

1. Introduction

USA Environment has been retained by Clean Harbors to perform a radiological screening survey of the Wichita, KS facility in order to confirm and supplement data presented in the Kansas Department of Health and Environment report from a 2010 survey of the same property. The site is located at 2549 North New York Avenue in the north- central portion of Wichita, Kansas. The site is approximately 6 acres and includes open field areas, paved/asphalted areas as well as several structures. Adjacent properties include the Missouri Pacific Railroad (MoPac RR) and the Union Pacific Railroad (UPRR) facilities to the north and west, and the former El Paso Corporation refinery to the south (previously decommissioned and demolished by USA Environment LP). The site is additionally bordered by New York Avenue, East Fork of Chisholm Creek, Hwy I-135 and a residential area are to the east.

The site was formerly owned and operated by Reid Supply Company from the mid-1970's to early 1986. Operations conducted during this time frame included hazardous waste operations with spent solvents, spent electroplating baths, and other hazardous sludge.

Although ownership has changed many times since 1986, the property has always been involved with chemical processing and waste management activities. Solvents that had been used with radioluminescent (radium) paints are known to have been one of the chemicals processed at this facility. Exact quantities or concentrations of radium in these solvents are not known. Likewise, data concerning the specific handling/processing protocols for these radium-impacted solvents is not known. The Kansas Department of Health and environment conducted a screening surface survey of the site in October of 2009. Several portions of the site were determined by KDHE to be impacted by radium based on this survey. One section was found to have elevated gamma radiation levels of 35 μ R/hr, approximately three times the assumed background of 10 μ R/hr. Soil sampling or gamma spectroscopy was not conducted at this time. Based on this screening survey, KDHE concluded that a specific radioactive materials license is required for any activities being conducted on this property.

USA Environment was retained by Clean Harbors in order to provide a specific radioactive materials license and radiologic safety oversight for activities to be conducted during characterization and remediation of the facility. In order to provide a work plan for the radiologic oversight, USA Environment requested additional data concerning radiological characterization of the assumed radium-impacted portions of the site. Since more detailed data was not available, USA Environment developed a workplan to gather the required data. This workplan included detailed walkover gamma combined with GPS logging data survey of the assumed impacted locations and biased soil sampling based on past and present survey results. USA Environment mobilized to the site twice to conduct walkover surveys and soil sampling. The surveys and sampling are discussed further in the sections below.

2. Radiological Survey

USA Environment first mobilized to the site on Thursday August 15th, 2013 in order to conduct the walkover survey and soil sampling. Due to heavy rains over the previous two weeks, the site conditions were less than ideal for surveying due to saturated ground and standing water in several locations. However, the areas designated as radium-impacted by the previous KDHE survey were accessible and the activities proceeded as planned. During the downloading of the files from the datalogger, errors were encountered that resulted in corrupt, unreadable data. Despite several attempts to recover the data, they were deemed irrecoverable and a second survey scheduled. USA Environment remobilized to the site on September 9th, 2013 in order to repeat the walkover survey and procure additional soil samples.

The walkover surveys utilized gamma-ray, 3"x3" NaI scintillation detectors coupled to Ludlum 2241-3 survey meters, a sub- meter global positioning systems (GPS), and data loggers to automatically record the radiation levels and their locations as the field operator performs the walkover. Figure 1 displays the aerial view of the site with the individual survey units outlined. Based on the initial KDHE report, units 1, 2, 3,12, and 13 were assumed to be impacted, units 4, 5, 6, 14, 15, 16, and 17 potentially impacted, and the remainder of the units having a low probability of being impacted.

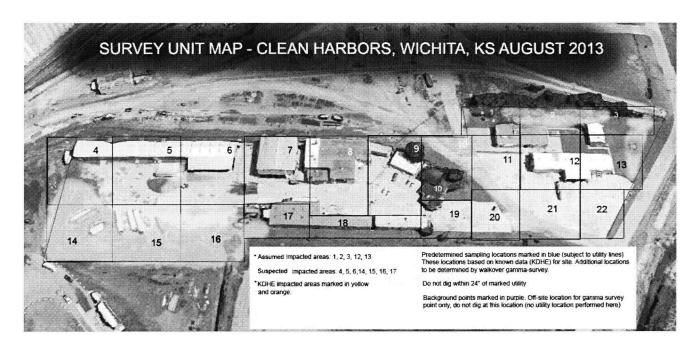


Figure 1. Clean harbors Facility divided into 22 survey units with the KDHE assumed contaminated zones highlighted.

The survey over the assumed-impacted areas was conducted with the detectors mounted 15 cm (6") above the ground, with the technician walking traverses across the survey units with a 1m traverse spacing. This approach provides the field survey operator with continuous measures (once per second) of the distance to the right or left of a target traverse line, guiding the course corrections to follow the target line within approximately 0.5 m. Together, the successive traverses form a serpentine pattern that provides approximately one radiation measurement in every 1 m² area based on a traverse spacing of 1 meter (m) and a walking velocity of 0.5 m/s.

Areas of lower probability were walked with a wider traverse spacing of 3 m. These areas were suspected of having diffuse contamination spread uniformly across the areas as depicted by the previous KDHE survey. Paved surfaces such as parking lots were not previously identified as impacted and were assumed to be of very low probability of being contaminated. These areas received only individual, sparsely-distributed survey points.

2.1 Survey Sensitivities, Detection Limits and Field Instrumentation

The following radiological field survey instruments will be used with the detection sensitivities having been determined following the guidance of NUREG-1507 using nominal literature values for background, response, and site conditions for the Ludlum detectors.

All walkover surveys were performed using 3" x 3" sodium iodide (Nal) scintillation detectors (Model 44-20, Ludlum Measurements Inc., Sweetwater, TX) coupled serially to count rate meters (Model 2241-3, Ludlum). The survey meters were coupled in turn to sub-meter global positioning systems (GPS) (Trimble Pro XRS) to automatically record detector positions every second. The data logger used to store the detector positions recorded the gamma radiation exposure rates (cpm) every two seconds. The logged data from the survey meters and GPS systems was downloaded daily to field computers for transfer and analysis.

Since all the detectors were calibrated to cesium-137 efficiency sources, a direct reading of $\mu R/hr$ cannot be determined due to the variance in energy response of NaI to gamma radiation. Instead, direct measurements were made in units of counts per minute. A Ludlum model 19 survey meter , which has a uniform energy response across the energies associated with radium-226 and efficiency sources was then used to conduct gamma exposure rate surveys at the sampling locations. The readings in $\mu R/hr$ were then correlated to the direct cpm measurements taken at the identical locations using the Ludlum 4421-3 survey meter with the 3"x3" NaI detector. A table containing the specific measurements made using each detector for each of the sampling locations is contained in Appendix III. Figure 2 below graphically displays this data and the correlation for converting cpm measurements to $\mu R/hr$.

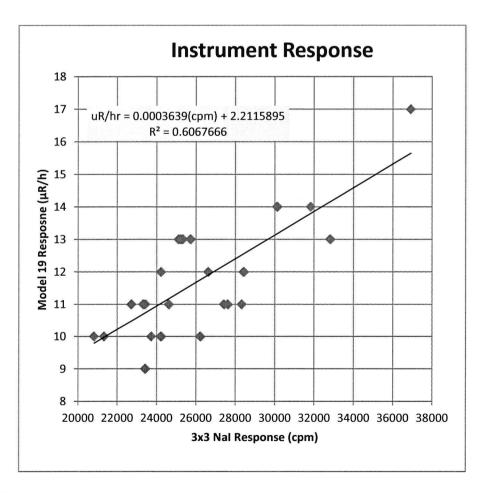


Figure 2. NaI detector response correlated to the Model 19 Response in order to determine µR/hr gamma exposure measurements from cpm data.

All instrumentation were calibrated (within the past 12 months). Daily field performance checks (i.e. background and source check) were conducted in accordance with individual instrument use procedures. These performance checks were performed prior to daily field activities and at any time the instrument response appears questionable. Calibration records for the detectors used are included as an appendix to this report.

2.2 Soil Sampling

Several locations were preselected for sampling based on the KDHE survey data. Additional locations were to have been selected based on an action level of 20 μ R/hr. In the absence of any areas meeting the action level, sampling locations were to be selected based on the available data and the judgment of the field technicians in order to obtain representative data for the site. A total of 15 discrete locations were selected for sampling. During the initial mobilization to the site, 10 locations were sampled. These are depicted on Figure 3 as sampling locations 1a, 1b, 2, 5, 10a, 13, 14, 15, 17, 21 where the number represents the survey unit location the samples were collected from. The remaining 5 locations (4, 13b, 16, 18, 19) were sampled during the subsequent mobilization to the site along with an additional 10-point composite sample was collected across an area in Unit 1 based on analytical data obtained from the first mobilization's data set. This was overtop the location of the former drain line.

Each sampling location had one sample from the top 12" of soil depth and one sample from the second 12" of soil depth (12"-24" below surface) collected. All samples were analyzed via gamma spectroscopy by Eberline Services in OakRidge, TN. In addition, the 10-point composite was collected evenly distributed across an area identified as previously containing a drain system. Soil data from the top 12" indicated levels slightly elevated from background concentrations. In order to compare concentrations to KDHE limits, samples were collected to a depth of 15 cm (6"). Analytical reports for all sampling locations are contained in Appendix II of this report.

3.0 Survey and Sampling Results

Figure 3 displays the survey results and sampling locations overlaid onto satellite imagery of the facility. (A larger version of this map is contained in Appendix I) Gamma survey results were unremarkable in that the action level of 20 μ R/hr was never recorded in any area surveyed. The maximum gamma radiation levels were found to be only 16 μ R/hr.

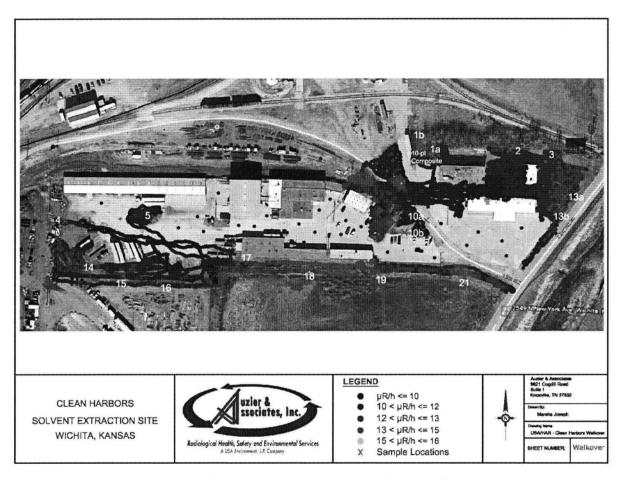


Figure 3. Survey results and sampling locations.

The minimum, median, maximum and average values of measurements recorded are listed in Table 1. The median value corresponded to on-site areas assumed to be non-impacted (Southeast corner near sample location 21 and employee parking areas) and was determined to be 11 μ R/hr. An off-site location over similar soil (shown in upper Northeast corner of map in Figure 1 on the public right-of-way alongside HWY I-135) was also found to be 11 μ R/hr. This is consistent with typical background measurements across this region of the United States and was used as the background gamma exposure rate for this facility. Measurements displayed on the map were color-coded based on their values as compared to the average. Table 1 lists the statistical data for the distribution. Measurements greater than two standard deviations above the average were assumed to be "elevated" levels and are depicted in light green on the survey map. Although elevated above the determined background, elevated results did not indicate significant widespread contamination.

Table 1. Statistical data for survey results

	cpm	uR/hr	
min	11230	6	
median	22730	11	
65.0%	24350	11	
85.0%	26430	12	
90.0%	27230	12	
95.0%	28830	13	
97.5%	30230	13	
100.0%	35930	15	
Max	38530	16	
Average	22600	10.4	
StDev	3850		
Avg+σ	26449	11.8	
Avg + 2σ	30299	13.2	

Figure 4 shows the soil sampling data in comparison to EPA guidelines for allowable soil concentrations of radium-226. Table 2 lists the analytical data obtained from the soil samples collected. Sample results ranged from 0.62 to 3.60 pCi/g of radium -226. According to KDHE literature, typical background concentrations of radium-226 for this region ranges from 1-4 pCi/g. Based on the median soil sample results, background concentrations of radium-226 were 1.1 pCi/g. Only two locations resulted in radium-226 concentrations statistically significant from background. The two were 2.5 and 3.6 pCi/g and occurred in the section that had previously contained the drain.

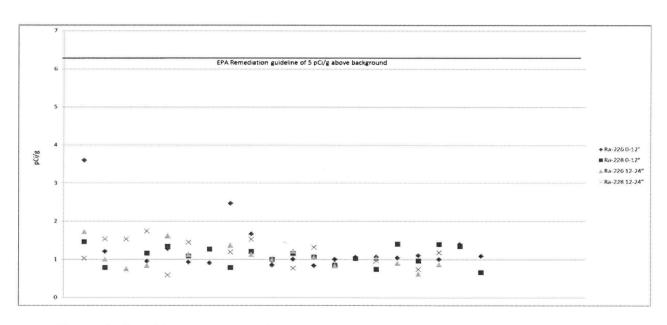


Figure 4. Graphical representation of sampling data relative to EPA guidelines.

Table 2. Soil sampling summary data. All values in pCi/g.

Depth	0-12"				12-24"	
	Ra-226 0-12"	Ra-228 0-12"	K-40	Ra-226 12-24"	Ra-228 12-24"	K-40
1A	3.6	1.46	17.2	1.73	1.03	18.2
1B dup	1.21	0.79	14	1.01	1.54	20.6
1B				0.76	1.53	20.8
2	0.955	1.17	17.4	0.85	1.74	18.4
3	1.28	1.34	18.5	1.62	0.59	7.14
4 dup	0.93	1.09	21.9	1.13	1.45	20.4
4	0.91	1.27	22.1			
5	2.47	0.79	18.6	1.37	1.2	19.8
10	1.67	1.21	23	1.14	1.53	20.7
13A	0.86	1.01	19.6	1	0.91	16.8
13B	1.01	1.16	18.3	1.22	0.77	15.9
14	0.84	1.07	21.8	1.07	1.32	19.4
15 dup	1.01	0.85	17.3	0.84	0.95	21.5
15	1.06	1.03	17.7			
16	1.07	0.75	21.8	1.03	0.96	17.3
17	1.05	1.41	22.1	0.91	1.41	20.2
18	1.11	0.97	17.3	0.62	0.74	23.5
19	1.01	1.4	22	0.87	1.18	
21	1.4	1.35	29.7			
composite	1.09	0.67	13.4			
Avg	1.29	1.09	19.67	1.07	1.18	18.95
AVG BKG	1.09	1.09	19.67	1.00	1.18	18.95

4.0 Discussion

Survey results obtained by KDHE in 2010 could not be repeated for any of the assumed impacted areas of the facility. The conclusion drawn in 2010 was that the facility contained numerous locations where soil concentrations of radium-226 were assumed to be greater than 5 pCi/g above background based on surface gamma exposure rates of up to 35 µR/hr being measured in isolated locations with an assumed background exposure rate of 10 µR/hr. However, the current maximum gamma radiation level detected was only 16 μR/hr. Measurements a few μR/hr above background (12-14 μR/hr) were obtained in several locations across the site, however soil sampling results did not support an assumption of elevated levels of radium-226 based on these levels. The facility contains a wide variety of soil, gravel and rock types. Different soil types will contain different levels of naturally occurring radioactive material (NORM). Potassium-40 concentrations, a naturally occurring radionuclide with a high energy gamma, were determined to be in the high end of known background level ranges. As a gamma emitter, this could partially account for slight variances in gamma measurements across the site areas associated with compacted crushed rock containing higher levels of K-40 or other naturally occurring gamma emitting isotopes. Several of the locations, such as sample locations 18, 19 and 21 also contained K-40 concentrations above 20 pCi/g at either the first or second sampling depth. No historical evidence was provided to indicate potentially buried material that could result in subsurface concentrations of radium in the absence of surface deposits, other than the drain location in the Northeast corner of the facility.

The only location where the slightly elevated gamma measurements and soil concentrations indicated potential radium contamination from past processes was in the Northeastern portion of the site associated with hazardous drum storage and handling as well as a drain assembly that has been removed and back-filled at some point in the past. Soil sample results indicate that the elevated radium-226 concentrations were limited to the upper 12" of soil depth consistent with material that may have been spilled during drum handling processes. However, the elevated concentrations in these areas were less than 3 pCi/g above background levels in discrete locations and would not require remediation as a radiologically contaminated area under EPA guidelines. In addition, EPA and KDHE guidelines allow for averaging soil concentrations over 100m² for the upper 15cm depth. The 10-point composite sample was representative of the upper 15 cm depth over approximately 10m² covering the area associated with the historic drain location. Even averaged over this small of an area, the average concentration was found to be consistent with background levels. No data was collected that suggested soil concentrations exceeded 5 pCi/g above background levels down to a depth of 24". If radium contamination was the results of surface deposits, adverse weather over two years could account for the removal of surface contamination and the lower gamma radiation levels measured during this survey as compared to the measurements conducted in 2010. No soil sampling was conducted in 2010 for comparison to current data.

The location associated with the historic drain location was found to have bull rock with stabilizing sand beginning at approximately 6" depth and extending fully down to the 24" depth sampled during this scoping survey. Again, soil samples collected indicated any residual radium contamination was limited to the upper 12" of soil, however, the depth of the drain or soil conditions beyond 24" were not evaluated during this scoping survey. This area extends from the Northwest corner of the building in Unit 1 and approximately 40 feet to the Northwest to a shallow ditch adjacent to the vehicle right of way.

5.0 Conclusion

Assumptions for this site were that radium contaminated solvents leaked onto the surface across various locations on-site. In addition, there is suspicion that material may been discharged through a drainline previously located in the Northeast corner of the property. If years of contamination leaking onto the surface of the facility had caused site-wide contamination in excess of 5 pCi/g above background, radium deposits in the top 24" of soil should still be detectable via surface gamma scintillation detection and soil sampling. No information was found to indicate radium deposits would have been due to anything other than surface discharges with the exception of the drain location. Soil sampling combined with a walk-over gamma survey support the assumption that the majority of the facility has not been impacted by radium contamination. The portions of the site that have been linked to low levels of radium contamination do not indicate significant soil concentrations that would require remediation under any state or federal guidelines, based on the best available data.

References:

- 1. Unified Focused Assessment Report for the Safety Kleen (Wichita) Site (Reid Supply), Wichita, Sedgwick County, Kansas, KDHE I.D. No. # C208770722, Jan. 2010.
- 2. Naturally Ocurring Radioactive Material, KDHE Radiation Control Program, http://www.kdheks.gov/radiation/download/NORM Info.pdf, June 2010

Appendix I - Survey Map with Gamma Data



CLEAN HARBORS SOLVENT EXTRACTION SITE WICHITA, KANSAS



Radiological Health, Safety and Environmental Services
A USA Environment, L.P. Company

LEGEND

- µR/h <= 10
- 10 < µR/h <= 12
- 12 < µR/h <= 13
- 13 < µR/h <= 15
- 15 < µR/h <= 16
- Sample Locations



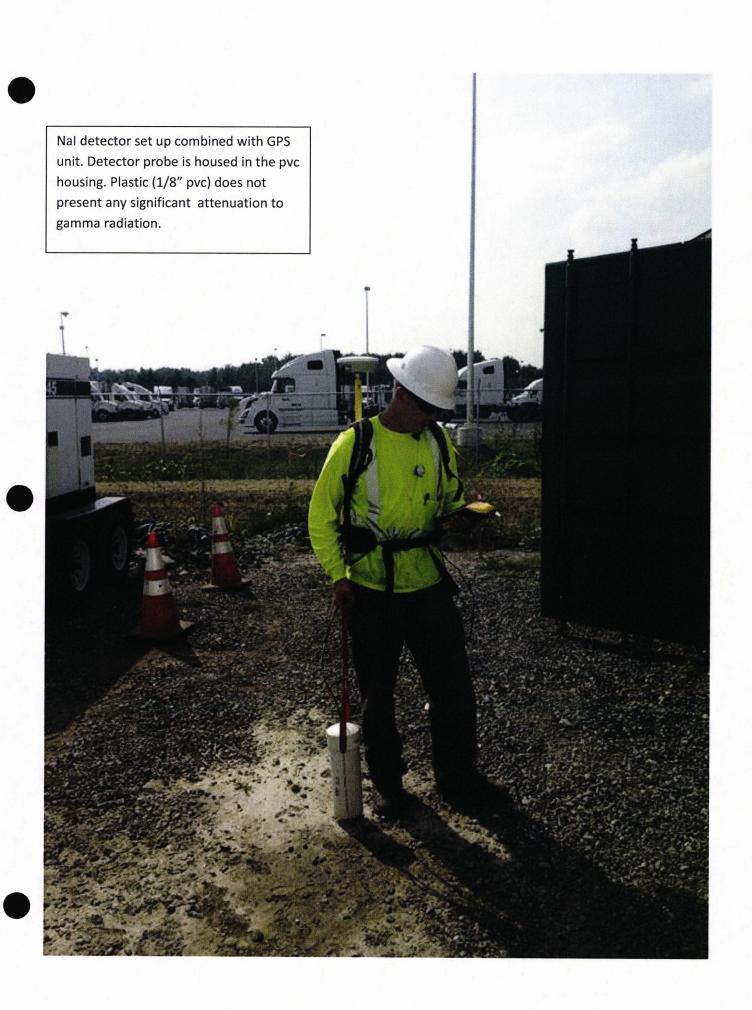
Audier & Associates 9621 Cogdill Road Suite 1 Knoxville, TN 37932

Marsha Joseph

USA/HAR - Clean Harbors Welkover

SHEET NUMBER:

Walkover



Appendix II - Analytical Data for Soil Sampling

USA ENVIRONMENT, LP

2950-NR-H026

STANDARD LEVEL IV REPORT OF ANALYSIS

WORK ORDER #13-08078-OR

September 5, 2013

EBERLINE ANALYTICAL/OAK RIDGE LABORATORY OAK RIDGE, TN

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
I	Chain of Custody	0004
II	Sample Acknowledgement	0007
Ш	Case Narrative	0010
IV	Analytical Results Summary	0013
\mathbf{v}	Analytical Standard	0024
VI	Quality Control Sample Results Summary	0026
VII	Laboratory Technician's Notes	0029
VIII	Analytical Data (Gamma Spectroscopy)	0034
	Last Page Number	0431



STANDARD OPERATING PROCEDURE

MP-001, Rev. 12 Effective: 10/31/12 Page 14 of 14

Sample Receiving

Eberline Services - Oak Ridge Laboratory LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

Date for Partial	Initials	Date	Initials	Checklist Items
		8/20/13	KC	Sample Log-In
	H.	8/21/3		Data Compilation
		9-3-13		First Technical Data Review
		9/4/10	- 1-	Second Technical Data Review
		9/4/13	A	Data Entry/Electronic Deliverable
		e kilis	8	Case Narrative
		9/4/12	KBS	Electronic Deliverable Proof
		9/5/19	ust	Samples Aralyzed within Holding Tin Yes? No?
		9/5/13	1184	QA/QC Review
		08/21	1384	Client in Possession of Data Electronic or Hard Copy
		00 21	139	Invoiced by Laboratory
Technical/Cleric	al Correction	ns, Signatui	res Needed,	Problems, Etc Date/Initials
ackage approved by	Hathy Or Layor	B. Anagaran	aulis_	9-5-/3 Date

SECTION I CHAIN OF CUSTODY

Chain of Custody Record

№ 5617

Eberline Services 601 Scarboro Road Oak Ridge, TN 37830 (865) 481-0683 Phone • (865) 483-4621 Fax



Project Name: CLEAN HARBORS	Project Number: 2950-NR-H	226	/5	7///	/ 1/3/ 9	8/0/7 A Page Lot 2
Send Report To: DON HALTER	Sampler (Print Name): TREUT NA	LEPA			/ / 	90// A Page of 2
Address: 10234 LucorE	Sampler (Print Name): Apple 114	PEAL			Different also	/ /2 /2
HOUSTON, TX 77017	Shipment Method: FEDEX		S. P. S.	/ / / /	RÉC'É AUG	<i>i</i> 2/0 /2013
DHALTER & USAENVIED. COM	Airbill Number: 7964 9122 955	4	A. St. Peruesia.		/ / / /	Purchase 20Co 114 440 St
Phone: 713-425-6937	Laboratory Receiving:			////		Purchase 2950 - NR - HOJG Order #: 2950 - NR - HOJG
Fax:	Carrela Carrela Carrela No	mber et		/ / / /	////	Comments, Special Lab Sample ID
Field Sample ID		ontainers /	<u> </u>		/ / / /	Instructions, etc. (to be completed by lab)
Ge10# 1B 12-24 4	8-10-13 1000 SOIL	IX				QCi/S
Geno# 1A 0-12 5	8-16-13 1000 SOIL	1 1				OCI/S
Benott 13 12-24 6		1 x				PCife
GeID# 13 0-12 7	8-16-13 1000 Soil	1 0				plita
GeID# 13 0-12 7 Gars# 11 12-24 8	8-16-13 1000 2016	1 K				PCifa
Gent 10 0-12 9	8-16-13 1000 Soll	\ X				PCifa
GRIDH 1B 0-12 10		1 ×				pcila
Gent 17 0-12 11	8-16-13 1000 Soil	1 ×	4			PCita-
Gen# 10 = 12-24 12	8-16-13 1000 Sol	1 ×	4			PCife
Geno# 10 0-12 9 Geno# 18 0-12 10 Geno# 17 0-12 11 Geno# 10 0-12-24 12 Geno# 2 0-12 13	8-16-13 1000 Soil	1 8	4			PC:/a
6000 a 12-24 19	8-16-13 1000 Soil	1 0	C			PCiTa
Ge18# 21 0-12 15	8-16-13 1000 SOIL) 1	X			PCila
Gent 15 12-24 16	8-14-13 1000 SOIL	\ X				PC/a
Gent 5 12-24 17	8-16-13 1000 Soll	1 >	(e Cila
GRID# 17 12-24 18	8-16-13 1000 Soil	1 1	K			PCOPG
Ge10# 5 0-12 19	8-16-13 1000 Soil	1 X				PCITA
GRID# 14 0-12 20	8-16-13 1000 SOIL	1 1				pcifa
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	Sample Custodia	n Remarks (Comp	leted By Laboratory):
Vient Wales-	Fed Ex	8/19/13	1030	QA/QC Level	Turnaround	Sample Receipt
Relinquished by: (Signature)	Fed Ex Received by: (Signature)	Date:	Time:	Love) I C	Routine □	Total # Containers Received?
Fedex	Kniston Coulett. Received by: (Signature)	8/20/13	900	Level II	24 Hour	COC Seals Present? COC Seals Intact?
	Received by: (Signature)	Date:	Time:	Level III 🗆	1 Week □	Received Containers Intact?
di di				Other	Other 5 DAY	Temperature?



Internal Chain of Custody

Work Order #	13-08078
Lab Deadline	8/23/2013
Analysis	Gamma - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	39	M1.3
	05	42	M1.3
	06	41	M1.3
Report: Co60, Cs137, Bi214, K40, Pb210, Ra223/226/228,	07	41	M1.3
	08	37	M1.3
Tl208, U235, U238 from Th & Pa lines & positives.	09	45	M1.3
	10	39	M1.3
	11	48	M1.3
	12	35	M1.3
	13	43	M1.3
	14	37	M1.3
	15	43	M1.3
	16	48	M1.3
	17	40	M1.3
	18	44	M1.3
	19	38	M1.3
	20	43	M1.3

		Location	on (circle e	one)		Initials	Date
Received by	Sample Storage	Rough Prep	Ргер	Separations	Count Room / 064	Keny Saej	8.20-13
Relinquished by	Sample Storage (Rough Prep	Prep	Separations	Count Room /160	Ken sais	8-20-13
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 8/20)	3 1102
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	C3/2	- 65
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	•	
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Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		0
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		i -
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

SECTION II SAMPLE ACKNOWLEDGEMENT

	Client Name	Contract/F	0	Project Type			U	ate R	eceiv	ed				R	equire	d Tur	narou	nd Da	ys				Eberli	ne Sei	rvices	WOLK	Order		100
U	JSA Environment, LP	2950-NR-		Environmental		0	1350 0000	20		-	3		5						1	3-	08	07	8						
	Project Name	Client Wo	2	Sample Disp				ab D							Int	ernal	Deadl	ine						Clier	it Dea	dline			
envicini erizere enni piorini e	2950-NR-H026	CLEAN HAR	BORS	\ H		0	8/	23	/2	01	3			0	8/	23	/2	01	3				30	3/2	3/	20	13		
Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma																			TO CLEAN TO	***********		ese de la constante de la cons	***************************************	Τđ
01	LCS	08/20/13	so	M1.3	х																								1
02	BLANK	08/20/13	so	M1.3	х																								1
03	DUP	08/20/13	so	M1.3	х																								1
04	GRID# 1B 12-24	08/16/13 10:00	so	M1.3	х																							T	1
05	GRID# 1A 0-12	08/16/13 10:00	50	M1.3	х																								1
06	GRID# 13 12-24	08/16/13 10:00	so	M1.3	х						Ī																		1
07	GRID# 13 0-12	08/16/13 10:00	so	M1.3	х																								1
08	GRID# 1A 12-24	08/16/13 10:00	so	M1.3	х																								1
09	GRID# 10 0-12	08/16/13 10:00	50	M1.3	х																							\neg	1
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11	GRID# 17 0-12	08/16/13 10:00	so	M1.3	х																							_	1
12	GRID# 10 12-24	08/16/13 10:00	so	M1.3	х				17										-			—						\top	1
13	GRID# 2 0-12	08/16/13 10:00	SO	M1.3	х																				-			\top	1
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15	GRID# 21 0-12	08/16/13 10:00	so	M1.3	х																							\dashv	1
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18	GRID# 17 12-24	08/16/13 10:00	so	M1.3	х																							\top	1
19	GRID# 5 0-12	08/16/13 10:00	50	M1.3	х				-																				1
20	GRID# 14 0-12	08/15/13 10:00	50	M1.3	х																								1
		Totals Per Ana	lysis (no	on QA samples)	17	0	0	0	0	0	0	0	o	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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	BERLINE	Oak Ridg						Housto	on, TX	77017							Housto	on, TX	77017										
						Voice		713-42	25-690	0						Voice	713-42	25-6936	3										
	Sample Log In Report	Voice: (8				Fax	- 1		25-691									5-691											
		Fax: (8	65) 4	83-4621	C	ontaci	t	Don H	alter							-													
						Voice		713-42	25-693	5																			
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STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 12 Effective: 10/31/12 Page 13 of 14

Eberline Services - Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER #			
SAMPLE MATRIX/MATRICES:	(CIRCLE	E ONE	OR BOTH)
	AQUEO	US	NON-AQUEOUS
	(CIRCLE	E EITH	HER YES, NO, OR N/A)
WERE SAMPLES:		Ι	
Received in good condition?	\bigcirc	N	
If aqueous, properly preserved	Υ	N	NIA
WERE CHAIN OF CUSTODY SEALS:		т	
Present on outside of package?	\bigcirc	N	
Unbroken on outside of package?	\bigcirc	N	
Present on samples?	\bigcirc	N	
Unbroken on samples?		N	
Was chain of custody present upon sample receipt?	\bigcirc	N	
IF THE RESPONSE TO ANY OF THE ABOVE IS NO , A DISCR (DSR) HAS BEEN ISSUED. REMARKS:	EPANT S	AMPL	E RECEIPT REPORT
V · · · · · · · · · · · · · · · · · · ·	_ DATE:	R/20	0/13
SIGNATURE: Laisten Coulston	_ DATE.	010	

Radiochemistry Service	ces
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SECTION III

CASE NARRATIVE



EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-36054

September 5, 2013

Don Halter USA Environment, LP 10234 Lucore Houston, TX 77017

CASE NARRATIVE Work Order # 13-08078-OR

SAMPLE RECEIPT

This work order contains seventeen soil samples received 08/20/2013. All samples were analyzed by Gamma Spectroscopy.

CLIENT ID	<u>LAB ID</u>	<u>CLIENT ID</u>	LAB ID
GRID# 1B 12-24 GRID# 1A 0-12 GRID# 13 12-24 GRID# 13 0-12 GRID# 1A 12-24 GRID# 10 0-12 GRID# 1B 0-12 GRID# 17 0-12	13-08078-04 13-08078-05 13-08078-06 13-08078-07 13-08078-08 13-08078-09 13-08078-10 13-08078-11	GRID# 2 0-12 GRID# 2 12-24 GRID# 21 0-12 GRID# 15 12-24 GRID# 5 12-24 GRID# 17 12-24 GRID# 5 0-12 GRID# 14 0-12	13-08078-13 13-08078-14 13-08078-15 13-08078-16 13-08078-17 13-08078-18 13-08078-19 13-08078-20
GRID# 10 12-24	13-08078-12		

ANALYTICAL METHODS

Gamma Spectroscopy was performed using Method LANL ER-130 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

GAMMA SPECTROSCOPY

Samples for Gamma Spectroscopy analysis were prepared by transferring a known mass/aliquot of each prepared and homogenized sample to a standard geometry container. Samples were counted on a High Purity Germanium (HPGe) gamma ray detector.

ANALYTICAL RESULTS CONTINUED

GAMMA SPECTROSCOPY CONTINUED

Samples demonstrated acceptable results for all gamma-emitting radionuclides as reported. The method blank demonstrated acceptable results for all radionuclides as reported. Results for the Bismuth-214 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Potassium-40 and Lead-214 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Cobalt-60 and Cesium-137 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

M.R. McDougall Laboratory Manager

Kathy B. Shaulis

Date: 9/5/2013

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit http://www.eberlineservices.com/client.htm to provide us with feedback on our services.

SECTION IV ANALYTICAL RESULTS SUMMARY



				·	Report To:				. 1	Nork Order Deta	ails:		
Ebei	rline	Analytical	Don Ha	lter				SDG:	13-0	8078			
			USA Et	vironme	ent, LP			Purchase Order:	2950-	NR-H026			THE REAL PROPERTY AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PER
Fina	і Кер	ort of Analysis	10234 I	ucore S	t			Analysis Category:	ENVII	RONMENT	TAL .		~~~~
••••		_	Housto	n, TX 77	017			Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	cu	CSU	MDA	Report Units
13-08078-01	LCS	KNOWN	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	1.32E+02	5.29E+00			pCi/g
13-08078-01	LCS	KNOWN	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	8.04E+01	3.22E+00			pCl/g
13-08078-01	LCS	SPIKE	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	1.34E+02	9.59E+00	1.18E+01	6.35E-01	pCi/g
13-08078-01	LCS	SPIKE	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	8.20E+01	8.27E+00	9.28E+00	4.99E-01	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	-1.61E-02	4.56E-02	4.56E-02	8.55E-02	pCl/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	4.00E-03	3.26E-02	3.26E-02	6.29E-02	pCl/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	1.45E-02	9.75E-03	9.78E-03	2.68E-02	pCl/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	3.84E-03	1.44E-02	1.44E-02	2.89E-02	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Potassium-40	LANL ER-130 Modified	2.60E-01	1.84E-01	1.84E-01	2.58E-01	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	6.98E-02	2.45E-01	2.45E-01	4,66E-01	pCl/q
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	9,83E-03	2.50E-02	2.50E-02	4.47E-02	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Lead-214	LANL ER-130 Modified	-2.46E-02	2.44E-02	2.44E-02	4.00E-02	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Radium-223	LANL ER-130 Modified	-2.76E-01	2.37E-01	2.38E-01	3.75E-01	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Radium-226	LANL ER-130 Modified	4.00E-03	3.26E-02	3.26E-02	6.29E-02	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Radium-228	LANL ER-130 Modified	-1.61E-02	4.56E-02	4.56E-02	8.55E-02	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Thallium-208	LANL ER-130 Modified	-2.90E-03	3.29E-02	3.29E-02	6.65E-02	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Uranium-235	LANL ER-130 Modified	2.82E-02	8.69E-02	8.69E-02	1.52E-01	pCi/g
13-08078-02	MBL	BLANK	08/20/13 00:00	8/20/2013	8/20/2013	13-08078	Uranium-238	LANL ER-130 Modified	3.66E-01	4.22E-01	4,23E-01	3.56E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



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Report To:								Work Order Details:								
P 1	.15	Amplydiani	Don Ha					SDG:	13-0	8078						
Eper	TIME	Analytical	USA Er	vironme	nt. LP			Purchase Order:	2950-1	VR-H026						
Final	Ren	ort of Analysis		ucore S		1 THE AC AL AL THOUSAND A VARIABLE AND THE		Analysis Category:								
IIIIa	ı izeb	ort of Arialysis	~	n, TX 77				Sample Matrix:	SO							
Lab	Sample	Client	Sample Date	Receipt Date	Analysis Date	Batch	Analyte	Method	Result	cu	csu	MDA	Report Units			
ID	Туре	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	1.54E+00	2.32E-01	2.45E-01	2.77E-01	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	1.01E+00	1.74E-01	1.82E-01	1.29E-01	pCl/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	-3.32E-02	4.59E-02	4.59È-02	7.53E-02	pCI/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	5,61E-02	5.34E-02	5.34E-02	8.36E-02	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Potassium-40	LANL ER-130 Modified	2.06E+01	2.73E+00	2.93E+00	5.47E-01	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	1.35E+00	9.24E-01	9.27E-01	1.29E+00	pCl/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	1.43E+00	3.42E-01	3.50E-01	1.12E-01	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-214	LANL ER-130 Modified	1.01E+00	2.22E-01	2.28E-01	1.26E-01	pCl/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-223	LANL ER-130 Modified	4.53E-01	8.41E-01	8.42E-01	1.41E+00	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-226	LANL ER-130 Modified	1.01E+00	1.74E-01	1,82E-01	1.29E-01	pCi/g			
13-08078-03	DUP		08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-228	LANL ER-130 Modified	1.54E+00	2.32E-01	2.45E-01	2.77E-01	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24 GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Thallium-208	LANL ER-130 Modified	1.24E+00	2.90E-01	2.97E-01	4.17E-01	pCI/g			
13-08078-03	DUP	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-235	LANL ER-130 Modified	6.60E-02	3.11E-01	3.11E-01	5.14E-01	pCi/g			
13-08078-03	DUP		08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-238	LANL ER-130 Modified	1.53E+00	1.61E+00	1.61E+00	1.59E+00	pCi/g			
13-08078-03	DUP	GRID# 1B 12-24	00/10/13 10:00	0/20/2010	-		1									
	 	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	1.53E+00	2.32E-01	2.45E-01	2.05E-01	pCi/g			
13-08078-04	DO	GRID# 1B 12-24 GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	7.26E-01	1.80E-01	1.84E-01	2.86E-01	pCi/g			
13-08078-04	DO	GRID# 1B 12-24 GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	1.96E-02	5.30E-02	5,30E-02	9.75E-02	pCl/g			
13-08078-04	DO	GRID# 1B 12-24 GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	2.32E-02	4,95E-02	4.95E-02	9.18E-02	pCi/g			
13-08078-04	DO	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013		Potassium-40	LANL ER-130 Modified	2.08E+01	2.74E+00	2.94E+00	6.12E-01	pCi/g			
13-08078-04	DO	GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	8.31E-01	8.39E-01	8.40E-01	1.48E+00	pCl/g			
13-08078-04	DO		08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	1.45E+00	3.47E-01	3.55E-01	1.18E-01	pCi/g			
13-08078-04	DO	GRID# 1B 12-24 GRID# 1B 12-24	08/16/13 10:00	8/20/2013	8/20/2013		Lead-214	LANL ER-130 Modified	1.04E+00	2.19E-01	2.25E-01	1.41E-01	pCi/g			
13-08078-04	DO	GRID# 18 12-24 GRID# 18 12-24	08/16/13 10:00	8/20/2013	8/20/2013		Radium-223	LANL ER-130 Modified	7.00E-02	8.32E-01	8.32E-01	1.37E+00	pCi/g			
13-08078-04	DO	GRID# 18 12-24 GRID# 18 12-24	08/16/13 10:00	8/20/2013	-		Radium-226	LANL ER-130 Modified	7.26E-01	1,80E-01	1.84E-01	2.86E-01	pCi/g			
13-08078-04	DO	GRID# 18 12-24 GRID# 18 12-24	08/16/13 10:00	8/20/2013			Radium-228	LANL ER-130 Modified	1.53E+00	2,32E-01	2.45E-01	2.05E-01	pCi/g			
13-08078-04	DO		08/16/13 10:00	8/20/2013			Thallium-208	LANL ER-130 Modified	1.11E+00	2.65E-01	2.71E-01	4.12E-01	pCi/g			
13-08078-04	DO	GRID# 1B 12-24	08/16/13 10:00	8/20/2013			Uranium-235	LANL ER-130 Modified	1.24E-01	3.02E-01	3.02E-01	5.03E-01	pCi/g			
13-08078-04	DO	GRID# 1B 12-24	08/16/13 10:00	8/20/2013			Uranium-238	LANL ER-130 Modified	6.79E-01	1.04E+00	1.04E+00	1.81E+00	pCi/g			
13-08078-04	DO	GRID# 1B 12-24	08/18/13 10:00	0/20/2013	0/20/2010	10 00010	1 3.2		1							

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original





Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:						
			Don Halter					SDG:	13-08078					
			USA Environment, LP					Purchase Order:	2950-NR-H026				notice to the court of the a vision and understand woman	
			10234 Lucore St Houston, TX 77017					Analysis Category:	ENVIRONMENTAL				***************************************	
								Sample Matrix:						
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	cu	CSU	MDA	Report Units	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	1.46E+00	3.12E-01	3.21E-01	3.55E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	3.60E+00	3.64E-01	4.08E-01	1.72E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	2.20E-02	6.67E-02	6.67E-02	1.24E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	2.54E-02	6.41E-02	6.41E-02	1.19E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Potassium-40	LANL ER-130 Modified	1.72E+01	2.53E+00	2.67E+00	1,03E+00	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	2.90E+00	1.57E+00	1.58E+00	2.17E+00	pCl/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	1.80E+00	3.22E-01	3,35E-01	1.76E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-214	LANL ER-130 Modified	3.71E+00	5.08E-01	5.42E-01	1.90E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-223	LANL ER-130 Modified	8.92E-01	1.22E+00	1.22E+00	1.93E+00	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-226	LANL ER-130 Modified	3.60E+00	3.64E-01	4.08E-01	1.72E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-228	LANL ER-130 Modified	1.46E+00	3.12E-01	3.21E-01	3.55E-01	pCl/q	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Thallium-208	LANL ER-130 Modified	1.45E+00	2.53E-01	2.63E-01	2.89E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-235	LANL ER-130 Modified	1.04E+00	7.08E-01	7.10E-01	7.68E-01	pCi/g	
13-08078-05	TRG	GRID# 1A 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-238	LANL ER-130 Modified	3.14E+00	2.37E+00	2.38E+00	2.52E+00	pCi/g	
40.00070.00														
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	9.11E-01	2.43E-01	2.48E-01	2.84E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	9.98E-01	1.91E-01	1.97E-01	1.40E-01	pCl/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	2.48E-03	5.72E-02	5.72E-02	1.03E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	3.25E-02	4.98E-02	4.98E-02	9.51E-02	pCl/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Potassium-40	LANL ER-130 Modified	1.68E+01	2.47E+00	2.62E+00	7.32E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	-2.28E-01	8.25E-01	8.25E-01	1.41E+00	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	1.16E+00	2.05E-01	2.14E-01	1.15E-01	pCl/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-214	LANL ER-130 Modified	9.80E-01	1.81E-01	1.88E-01	1.50E-01	pCl/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-223	LANL ER-130 Modified	-2.93E-01	8.38E-01	8.38E-01	1.22E+00	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-226	LANL ER-130 Modified	9.98E-01	1.91E-01	1.97 £- 01	1.40E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radlum-228	LANL ER-130 Modified	9.11E-01	2.43E-01	2.48E-01	2.84E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Thallium-208	LANL ER-130 Modified	7.44E-01	1.82E-01	1.86E-01	2.09E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-235	LANL ER-130 Modified	1.36E-01	2.91E-01	2.91E-01	4,92E-01	pCi/g	
13-08078-06	TRG	GRID# 13 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-238	LANL ER-130 Modified	1.82E+00	1.52E+00	1.53E+00	1.42E+00	pCl/g	

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



Page 4 of 10

Printed: 9/5/2013 1:33 PM

Report To:							Work Order Details:						
Che.	din a	Analytical	Don Halter					SDG:	13-08078				
Eberline Analytical Final Report of Analysis			USA Environment, LP 10234 Lucore St Houston, TX 77017					Purchase Order:	2950-NR-H026 ENVIRONMENTAL SO				
								Analysis Category:					
								Sample Matrix:					
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	си	csu	MDA	Report Units
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	1.01E+00	2.54E-01	2.59E-01	2.40E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	8.62E-01	1.54E-01	1.60E-01	1.38E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	3.23E-02	5.55E-02	5.55E-02	1.02E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	4.32E-02	4.63E-02	4.63E-02	9.05E-02	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Potassium-40	LANL ER-130 Modified	1.96E+01	2.55E+00	2.74E+00	4.85E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	7.20E-01	9.20E-01	9.21E-01	1.66E+00	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	1.23E+00	2.17E-01	2.26E-01	1.17E-01	pCl/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-214	LANL ER-130 Modified	9.71E-01	1.75E-01	1.81E-01	1.29E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-223	LANL ER-130 Modified	-2.28E-01	1.07E+00	1.07E+00	1.38E+00	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-226	LANL ER-130 Modified	8.62E-01	1.54E-01	1.60E-01	1.38E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-228	LANL ER-130 Modified	1.01E+00	2.54E-01	2.59E-01	2.40E-01	pCI/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Thallium-208	LANL ER-130 Modified	9.44E-01	1.82E-01	1.88E-01	2.05E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-235	LANL ER-130 Modified	2.51E-01	2.78E-01	2.78E-01	4.98E-01	pCi/g
13-08078-07	TRG	GRID# 13 0-12	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Uranium-238	LANL ER-130 Modified	1.71E+00	1.08E+00	1.09E+00	1.92E+00	pCi/g
13-08076-07	ING	GRIO# 10 0-12	•		İ		4						***************************************
45 55570 00	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Actinium-228	LANL ER-130 Modified	1.03E+00	2.59E-01	2.64E-01	3.16E-01	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Bismuth-214	LANL ER-130 Modified	1.73E+00	2.28E-01	2.45E-01	1.62E-01	pCi/g
	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cobalt-60	LANL ER-130 Modified	5.63E-02	6.15E-02	6.16E-02	1.18E-01	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Cesium-137	LANL ER-130 Modified	6.16E-02	5.34E-02	5.35E-02	1.03E-01	pCi/g
	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Potassium-40	LANL ER-130 Modified	1,82E+01	2.53E+00	2.70E+00	7.37E-01	pCi/g
13-08078-08 13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-210	LANL ER-130 Modified	1.18E+00	1.17E+00	1.18E+00	1.43E+00	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-212	LANL ER-130 Modified	1.31E+00	2.39E-01	2.48E-01	1.28E-01	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Lead-214	LANL ER-130 Modified	1.75E+00	2.52E-01	2.67E-01	1.54E-01	pCl/g
	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-223	LANL ER-130 Modified	-1.22E+00	1.03E+00	1.03E+00	1.50E+00	pCi/g
13-08078-08 13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-226	LANL ER-130 Modified	1.73E+00	2.28E-01	2.45E-01	1.62E-01	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Radium-228	LANL ER-130 Modified	1.03E+00	2.59E-01	2.64E-01	3.16E-01	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013	8/20/2013	13-08078	Thailium-208	LANL ER-130 Modified	1.25E+00	2.19E-01	2.28E-01	2.09E-01	pCi/g
13-08078-08	TRG	GRID# 1A 12-24	08/16/13 10:00	8/20/2013		13-08078	Uranium-235	LANL ER-130 Modified	3.15E-02	3.23E-01	3.23E-01	5.35E-01	pCl/g
****		GRID# 1A 12-24	08/16/13 10:00	8/20/2013			Uranium-238	LANL ER-130 Modified	3.03E+00	1.70E+00	1.71E+00	1.63E+00	pCi/g
13-08078-08	TRG	URIU# IA 12-24	30,10,10,10.00	1 4120.2010									

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

